RESEARCH & INNOVATION @UNISA 2016

Define tomorrow.

UNISA university of south africa

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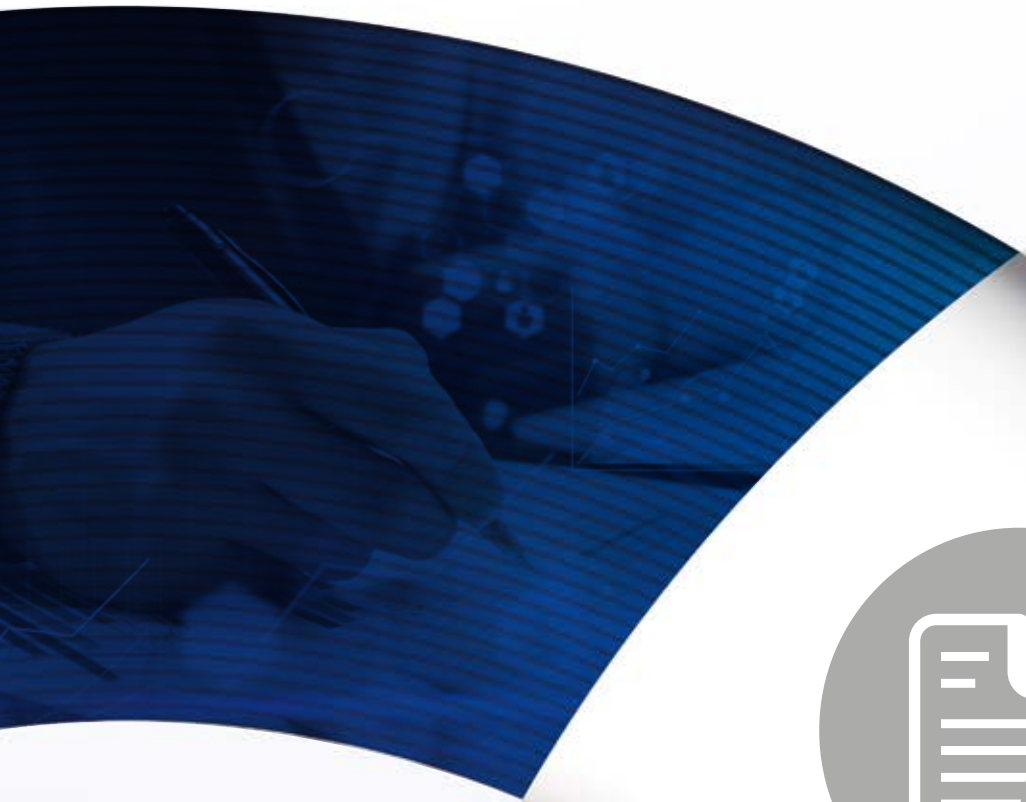


Foreword by the Principal and Vice-Chancellor

Professor Mandla Makhanya

There is no other university on the continent that is better placed than Unisa to drive and, to a significant extent, direct and shape the transformation and developmental agenda that is currently gripping our country and continent.

This is not only in terms of the more traditional understanding and practice of research as part of the core mandate of our universities, but also of scholarship, which includes both research and teaching.

This implies that as we focus on our five niche research areas as a university, we should also be focusing on the research that needs to be conducted and applied in the redrafting and redesigning of our courses and their content, to reflect our African context and relevance in a 21st-century world.

This research report gives some insights into how the university is putting into practice this commitment to use its massive potential to grow quality African education and produce research findings that can be used to solve real-life problems, change policies and influence practice to the benefit of ordinary citizens.

As this report shows, Unisa is making real progress in advancing women in research, especially African women, and providing strong support for early-career researchers and emerging research leaders.

In this way, we are shaping futures and building a new generation of researchers who are equal to the task of participating fully in the continental development agenda.

Message from the Acting Vice-Principal: Research, Graduate Studies, Innovation and Commercialisation

Professor Les Labuschagne

One of the most important lessons Unisa has learnt about research and innovation in the past five years is the value of focus. Resources, energy and expertise need to be properly directed and channelled if the university is to deliver results that are not just average but better than the norm.

This is why Unisa places such strong emphasis on its research strategy and the four strategic objectives that underpin it.

For the past five years – since Unisa established this portfolio in 2011 – the university, its researchers and its research support endeavours have used this strategy as a compass. Year after year, the benefits of doing so have become apparent: Unisa has enjoyed steady increases in research outputs while systematically transforming the research community itself.

Those outcomes speak to the two main pillars on which the research strategy was originally based: productivity and transformation. As the years passed, however, two more pillars were added: the sustainability of research at the university, and the influence this research has in shaping society.

This evolution reflects Unisa's determination to keep up with the changes taking place internally and externally, locally and globally.

Thus, for 2016, the year covered in this report, the four pillars of productivity, transformation, sustainability and influence are the yardsticks by which Unisa's research performance should be judged. Since the performance dashboard in this report provides comprehensive performance information, here are just a few examples of how research has fared against those four pillars.

Productivity: Total publication output has increased by 67% since 2011, and scholarly books by 271%. Here, it is important to acknowledge the role of Unisa Press, the largest university press in Africa, as a vehicle for researchers to publish well-researched scholarly books.

Transformation: In 2016, Unisa had 56 African NRF-rated researchers and 72 women with NRF ratings, compared to 22 and 44, respectively, in 2011. African researchers produced 436 of Unisa's outputs in 2016, against 193 in 2011, and women produced 372 against 278.

Sustainability: This is largely about investing in the skills of researchers and the facilities and equipment they use. In 2016, the university had 13 different research support programmes, ensuring that researchers across the development continuum, from emerging to established, had access to appropriate research support.

Influence: There has been 24% growth in publications in journals listed with international indices, showing that Unisa's research matters to a much broader community. Similarly, Unisa has seen a steady increase in the number of NRF-rated researchers, with more applications succeeding.

Also important for both sustainability and influence is the university's intellectual property (IP) portfolio, which started from the ground up in 2011. Unisa's investment in IP development bore the first fruits in 2016 when the Technology Innovation Agency (TIA) awarded seed funding to four Unisa innovations. Furthermore, 10 patent applications were filed in 2016, one patent was granted and 33 IP disclosures were made by Unisa staff. The door is open for many more IP advancements.

Looking to the future of research and innovation at Unisa, the challenge is to maintain and sustain such growth. Having reached critical mass in its research and innovation endeavours, there is no going back. As the largest university on the continent, Unisa must continue with the task of building future generations of researchers. Africa's future depends on it.

Research dashboard

RESEARCH ACCOLADES AND NOTABLE MEMBERSHIPS

The importance of measuring the success of research efforts cannot be overemphasised. An important measure in this regard involves the recognition of achievements in the form of awards and memberships of prestigious organisations. External awards serve to provide credible affirmation of excellence. Of equal importance, internal awards encourage researchers to provide quality output through the formal recognition of such achievements.

This section features highlights experienced during 2016.

External research accolades and notable memberships

In 2016 a number of Unisa researchers received prestigious awards from and memberships of organisations and institutions outside the university. These awards and memberships represent an independent and unbiased vote of confidence, and the peer recognition received in this way furthers the research programmes of individual researchers, adds to their scholarly credentials and contributes to the research profile of the university.

NRF Excelleration Award for South African Research Institutions

Prof. Les Labuschagne (Acting Vice-Principal: Research, Postgraduate Studies, Innovation and Commercialisation), Tracey October (Clarivate Analytics), Prof. Mandla Makhanya (Principal and Vice-Chancellor: Unisa), and Dr Ndanduleni B Nthambeleni (Executive Director: Grants Management and Systems Administration, NRF)

At the 2016 National Research Foundation (NRF) Awards ceremony to recognise and celebrate South African research excellence, Unisa received the Excelleration Award for South African Research Institutions. Derived from the words "excellence" and "acceleration", the award acknowledges South African research institutions for achieving the most improved research performance over recent years, measured against a selection of critical indicators.

Handing over the award at Unisa on 5 December 2016, Dr Ndanduleni Nthambeleni, the Executive Director of Grants Management and Systems at the NRF, said the award is meant to celebrate and recognise those institutions that improve the quality of research and their ouput. He added that Unisa had made a tremendous improvement and contribution to the quality of research.

Professor Mandla Makhanya, Principal and Vice-Chancellor of Unisa, who received the award on behalf of the university, said it served as a necessary impetus for the university to continue with research and to strengthen its capacity to produce research work of high quality.

Research dashboard

NRF Hamilton Naki Award

Prof. Lerothodi Leeuw

Professor Lerothodi Leeuw of the College of Graduate Studies walked off with the Hamilton Naki Award at the 2016 NRF Awards ceremony. This award honours African scientists moving towards world-class research performance by giving them encouragement and recognition for their efforts to advance their careers in science, despite considerable equity challenges.

Leeuw is the first African South African to obtain a Bachelor of Science degree at the Massachusetts Institute of Technology (MIT) in the USA and one of only three African students from anywhere in the world to major in Physics there. He went on to obtain an MSc degree in Astronomy at the University of Cape Town and a PhD degree in Astrophysics at the University of Central Lancashire in the United Kingdom.

Leeuw conducts multi-wavelength astrophysical research on the evolution of elliptical galaxies and their progenitors, in both gravitationally lensed and un-lensed systems. The lensed systems are excellent probes of dark matter that is partially responsible for gravitational lensing, and one of the aims of the research is to assemble a large sample of gravitational lenses that can be used to probe the distribution and nature of dark matter in the Universe.

Speaking about the award, Leeuw said that it was named after Hamilton Naki, the legendary self-taught surgeon who trained generations of medical students in surgical techniques. "It is a huge honour to receive the award. Part celebration and reflection, it is a call to action to carry forward the legacy of Hamilton Naki in the pursuit of excellence in research, training, and community engagement," he said.

This research exploits observations at infrared to radio and complementary wavebands obtained using ground and space telescopes, both large and small. In South Africa, the large telescopes he uses currently include the Southern African Large Telescope, SALT, and, in the future, the MeerKAT, which is part of the Square Kilometre Array (SKA). Major international collaborations include work with the Herschel-ATLAS consortium and observations with the CARMA ARRAY.

"It is a huge honour to receive the award. Part celebration and reflection, it is a call to action to carry forward the legacy of Hamilton Naki in the pursuit of excellence in research, training, and community engagement."

Women in Science Awards (WiSA)

1. Dr Naomi Nkealah, 2. Prof. Shivani Mishra, 3. Nozipho Gumbi, 4. Promise Malematja

Four Unisans walked off with the honours at the Women in Science Awards (WiSA) ceremony on 11 August 2016. Through these awards, the Department of Science and Technology (DST) recognises and rewards the achievements of South African women in science and research.

Dr Naomi Nkealah, senior lecturer in English Studies, won the Award for Distinguished Young Woman Researcher, while **Professor Shivani Bhardwaj Mishra** was the second runner-up in the Distinguished Women in Science award for Natural and Physical Science. **Nozipho Gumbi**, a PhD Nanotechnology student, and **Promise Thapelo Malematja** from Unisa's Material and Process Synthesis (MaPS) research unit, received a TATA Africa Scholarship for Women in Science, Engineering and Technology in the doctoral and master's student categories respectively.

Besides receiving national recognition for their research excellence, Mishra and Gumbi also made their mark on the international stage. Mishra was elected as a **Fellow of the Royal Society of Chemistry,** United Kingdom. Gumbi, in turn, made it into the last 10 for the **International FameLab Finals** at the Cheltenham Science Festival before continuing with her six-month research visit on a scholarship at the Karlsruhe Institute of Technology in Baden-Württemberg, Germany.

Research dashboard

L'Oréal-UNESCO for Women in Science Fellowship

Juliet Sackey

Angela Karoro

Juliet Sackey and **Angela Karoro**, both from the UNESCO-Unisa Chair in Nanoscience and Nanotechnology and pursuing their PhD studies in Physics, received the prestigious L'Oréal-UNESCO for Women in Science Fellowship in October 2016.

The L'Oréal-UNESCO for Women in Science programme recognises the achievements and contributions of exceptional females across the globe, by awarding promising scientists with fellowships to help further their research. Sackey's research focuses on the biomimicry of the multi-scaled architecture on selected butterfly wings for photonic application while Karoro's research project is all about solar selective properties of the laser-treated tubular cobalt-alumina nanocomposite.

National Order of the Baobab (Silver)

Prof. Mamokgethi Phakeng

Professor Mamokgethi Phakeng, Unisa Vice-Principal of Research and Innovation in 2016, received the National Order of the Baobab (Silver).

The Order of the Baobab recognises South African citizens who have contributed to community service, business and economy, science, medicine and technological innovation.

In this regard, Phakeng was acknowledged for her excellent contribution in the field of science and representing South Africa on the international stage through her outstanding research work.

South African Young Academy of Science (SAYAS) Membership

Prof. Puleng Segalo

Dr Naomi Nkealah

Professor Puleng Segalo and **Dr Naomi Nkealah** became members of the SA Young Academy of Science (SAYAS). SAYAS membership recognises young scientists adding value to South Africa's scientific knowledge base. Segalo heads the Office of Research and Graduate Studies in the College of Human Sciences, which manages the research activities of 19 different academic departments.
Nkealah, senior lecturer in English studies, has a particular research interest in feminism and African women's writing.

Research dashboard

CERM-ESA International Advisory Board

Prof. Catherine Hoppers

Professor Catherine A Odora Hoppers, the incumbent of the Department of Science and Technology (DST)/National Research Foundation (NRF) South African Research Chairs Initiative (SARChI) in Development Education at Unisa, was appointed to serve on the East and South African-German Centre of Excellence for Methodologies and Management (CERM-ESA) International Advisory Board.

Her task as a member of the international advisory board will be to guide and advise the steering committee on CERM-ESA academic and research programmes and activities in relation to an Africa-centred approach and to focus jointly and within the specific countries.

Nanotechnology National Contact Point

Prof. Sabelo Mhlanga

Professor Sabelo Mhlanga, Deputy Director at Unisa's Nanotechnology and Water Sustainability (NanoWS) Research Unit, has been acknowledged by the Department of Science and Technology (DST) in a big way. The DST has recognised his knowledge and experience of South Africa's research strengths in the Nanotechnology field, and therefore has appointment him as the South African Nanotechnology National Contact Point (NCP) for the European Union's Horizon 2020 (H2020) Programme.

The appointment is from August 2016 until the end of the programme in 2020. Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over seven years (2014 to 2020), in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market.

Prof. Nosisi Feza

Distinguished Scientist Award in Mathematics Education, *Centre for Advanced Research and Design, Venus International Foundation, India*

Opening up access to mathematics education for African children is the main research passion of **Professor Nosisi Feza**, Head of the Institute of Science and Technology Education (ISTE). She obtained a PhD in Mathematics Education at the State University of New York in Buffalo and was a research fellow at the University of Northern Iowa at one point, as well as a researcher with South Africa's Human Sciences Research Council (HSRC).

Her Distinguished Scientist Award is not the first time Feza has gained international recognition for her work in early childhood mathematics. She was previously recognised by the University of Michigan as a diversity scholar in science, technology, engineering and mathematics (STEM) education, and contributed to the Trends in International Mathematics and Science Study (TIMSS) and Mathematics Teaching in the 21st Century (MT21). Back in South Africa, she was commissioned by the Presidency to conduct a study looking at early childhood education provision, its quality and accessibility. The findings were incorporated into an influential report, *Diagnosed Review of Early Childhood Development*, which informed policy on Grade R provision.

Prof. Sabelo Ndlovu-Gatsheni

Restitution Foundation Award

During the Restitution Foundation's inaugural conference, held in Cape Town in November 2016, **Professor Sabelo Ndlovu-Gatsheni** received one of the first three restitution awards for "contributing his considerable intellectual ability to the emancipation of the African continent and the Global South". Gatsheni is the Head of Archie Mafeje Research Institute (AMRI) and has been seconded to the Office of the Vice-Chancellor as the Director of Scholarship at the Change Management Unit.

Gatshini was also included in the respected French newspaper *Le Monde's* list of ten greatest minds on decolonisation and decoloniality today, which was published in October 2016.

Prof. Gisela van Rensburg

FUNDISA Research Excellence in Nursing Award

Well known within the nursing profession as a champion of nursing education and the development of nurses' research skills, **Professor Gisela van Rensburg** of the Department of Health Studies, College of Human Sciences, is actively involved in capacity-building projects at Unisa and other institutions, focusing on preparing nursing educators to support students in becoming well-equipped, skilled practitioners.

The FUNDISA Research Excellence in Nursing Award is from the Forum of University Nursing Deans of SA (FUNDISA) and recognises her research on innovative student support strategies in an open distance learning context. FUNDISA has also inducted her into the Hall of Fame for Research Excellence in Nursing. She is also a board member of the Academy of Nursing of South Africa (ANSA), STTI Honor Society of Nurses Chi Xi at-Large Chapter and a member of the Health SA and AJNMeditorial boards.

Research dashboard

Internal research accolades

Cultivating a positive research and innovation environment takes time and also requires investment: both financial and in terms of human capital. Unisa has prioritised the improvement of a research enabling environment in its Research and Innovation Strategy. Research incentives and research awards and prizes, as highlighted in this section, make an important contribution towards cultivating a positive research environment at Unisa.

Unisa is busy harvesting some of the fruits of its considerable investment in research: the annual Research and Innovation Awards represent a bumper crop of research excellence. In all, 62 researchers, from emerging to well established, were fêted at the awards ceremony, held on 3 March 2017.

2016 Principal's Prize for Excellence in Research

Dr Ndikho Mtshiselwa

This prestigious prize went to Dr Ndikho Mtshiselwa, Head of the Old Testament and Ancient Near Eastern Studies Unit in the College of Human Sciences.

Professor Ndikho Mtshiswela has a fascinating ability to make ancient texts relevant to modern-day Africa, using the Old Testament of the Bible to shed light on issues such as the landless poor, the plight of working-class people and patriarchal perceptions of women. Just one thought-provoking example is his 2016 article titled, "Mind the Working-class People! An African Reading of Leviticus 25:8-55". What's more, the work of this prolific researcher and writer is freely available to anyone with a Google email address, making his research extremely easy to find and access.

Recently promoted from senior lecturer to associate professor in Biblical and Ancient Studies, Mtshiswela has a Y rating from the NRF and is a Minister of the Methodist Church of South Africa. He has presented numerous papers at conferences and been published in many peer-reviewed journals, and is a worthy recipient of the coveted Unisa Principal's Prize for Excellence in Research.

The accolade is targeted at young and developing researchers not older than 35 years, young researchers or groups who have achieved academic research excellence of the highest quality as published in the preceding two years. The research cohort comprises of scholars who are generally in the minority throughout the national higher education system.

2016 Women's Awards for Excellence in Research

Back: Prof. Azwihangwisi Mavhandu-Mudzusi, ***Research Leadership*** *(CHS); Dr Lineo Johnson,* ***Resilience in Research*** *(CEDU); and Dr Madeleine Fombad,* ***Developing Researcher*** *(CHS); and front: Dr Patricia Makoni,* ***Youngest PhD****, (CEMS) and Prof. Philna Coetzee,* ***Research Leadership****, (CAS)*

Unisa has put in place targets towards the empowerment of women researchers in its Research and Innovation Strategy. There are set targets for, among others, National Research Foundation (NRF) -rated women researchers and women researchers holding doctoral qualifications. The Women in Research Awards is yet another initiative aimed at acknowledging research and innovation excellence by Unisa's women researchers. The awards honour and celebrate the achievements of women in their respective fields of research.

The Woman in Research Award is divided into the **Leadership in Research Award**, the **Developing Researcher Award** and the **Youngest Woman Doctoral Award**.

The Leadership in Research Award is awarded researchers who, in the past five years, have demonstrated their outstanding leadership in research by publishing widely, contributing to the advancement of research in their field, participating in the development of scholars through mentorship, providing supervision to a substantial number of postgraduate students, receiving recognition and awards in their fields as achievers and participating in community and/or industry engagement.

The Developing Researcher Award is aimed at acknowledging research and innovation excellence by Unisa's women researchers and encourages aspiring PhD candidates to become established researchers.

Research dashboard

Leadership in Research

Professor Philna Coetzee - Deputy Executive Dean in the College of Accounting Sciences

Seeing the big picture without missing small details is a skill that Professor Philna Coetzee has perfected over the years in her research on internal auditing topics. Despite the many responsibilities that go with her position as deputy executive dean of the College of Accounting Sciences, Coetzee continues to do research and publish her findings in local and international journals and books on internal auditing. A recent example was the paper she co-authored on how internal control activities and managerial conduct can influence the business sustainability of small, medium and micro enterprises (SMMEs) in South Africa. Coetzee is actively involved in internal audit matters, serving on the local Institute of Internal Auditors (IIA) Educational Committee and global IIA Academic Relations Committee. She also presents courses in internal auditing for organisations in the private and public sector, and is a speaker at various internal audit conferences and seminars.

Professor Azwihangwisi Mavhandu-Mudzusi – Department of Health Studies, College of Human Sciences

Eradicating discrimination against the lesbian, gay, bisexual, trans, and/or intersex (LGBTI) community on South African university campuses is key to eradicating HIV/Aids, according to Professor Azwihangwisi Mavhandu-Mudzusi, Chairperson of the College of Human Science's Research Ethics Review Committee. She became aware of the challenges facing LGBTI students while working as HIV/Aids coordinator at the University of Venda, where she noted an increase in new HIV infections and Aids-related deaths among members of its LGBTI community. Mavhandu-Mudzusi embarked on a series of research studies dealing with HIV/Aids and LGBTI students, including a collaborative study on support, care and advocacy for LGBTI youth at various universities in the Southern African Development Community. That study revealed the many human rights violations affecting LGBTI students, prompting her to undertake further research that has pointed to an important conclusion: "For the country to eradicate HIV/Aids and reach the envisioned zero HIV infection, a new level of zero stigma and discrimination should be reached."

Developing Researcher

Dr Tracey McKay – Department of Environmental Sciences, College of Agriculture and Environmental Sciences

Generally speaking, risk-taking comes less easily to women, mainly because women are often taught from a young age to play it safe. But taking calculated physical risks, such as doing bungee jumping or white-water rafting, can be enormously beneficial to women. It can give them greater self-confidence and help them to remain young in spirit. This is one of the conclusions that senior lecturer Dr Tracey McKay has drawn during the course of her research into South Africa's adventure tourism industry – on which she recently completed her doctorate. McKay has also personally tested the benefits of adventure tourism, having taken the plunge by bungee jumping in Soweto, among other things. Adventure tourism research is only one of her interests, however. To date, she has authored or co-authored more than 30 papers on a variety of subjects ranging from urban transport patterns and waste disposal to mine closures. With a keen interest in education, she has also written several papers on basic and tertiary studies including looking at the impact of tutors on first-year students.

Professor Madeleine Fombad – Department of Information Sciences, College of Human Sciences From knowledge management and accountability in public-private partnerships to community radio and ICT for development, Professor Madeleine Fombad has found a wealth of research topics in which to the body of knowledge in her chosen discipline, information sciences. This is quite a departure from her original study choice, law, which she studied at the University of Yaounde Cameroon, starting with an LLB and then tackling her master's. Her journey as an academic took Fombad to the University of Botswana, where she completed her master's in Library and Information Studies, following that with a PhD in Information Sciences from the University of Pretoria. Now, at Unisa, she teaches advanced information and knowledge management and conducts research on knowledge management, collaborative governance and accountability, development in libraries, information communication technology and public-private partnerships.

Resilience in Research

Dr Lineo Johnson – Adult Basic Education and Training and Youth Development, College of Education

Most mature students might consider a doctorate to be the end destination in their journey. Dr Lineo Johnson sees hers as a beginning. "This achievement is the start of a long academic journey. I see it as opening doors in a very challenging discourse," says Johnson, whose doctoral thesis was entitled, "Offenders' perceptions of correctional education programmes in the correctional facilities of Tshwane". Currently teaching ABET management at postgraduate level, her research interests lie in adult teaching and learning, correctional education, contemporary issues in adult education and community education for development. Johnson is the author of several journal articles, has presented papers on ubuntu in correctional education and the impact of social grants on rural women, and has contributed to a book on education in correctional facilities. She is enthusiastically involved in adult and community education and training (ACET) programmes in Tshwane's correctional centres.

Dr Bolanle Deborah Ikotun – Department of Civil and Chemical Engineering, College of Science, Engineering and Technology

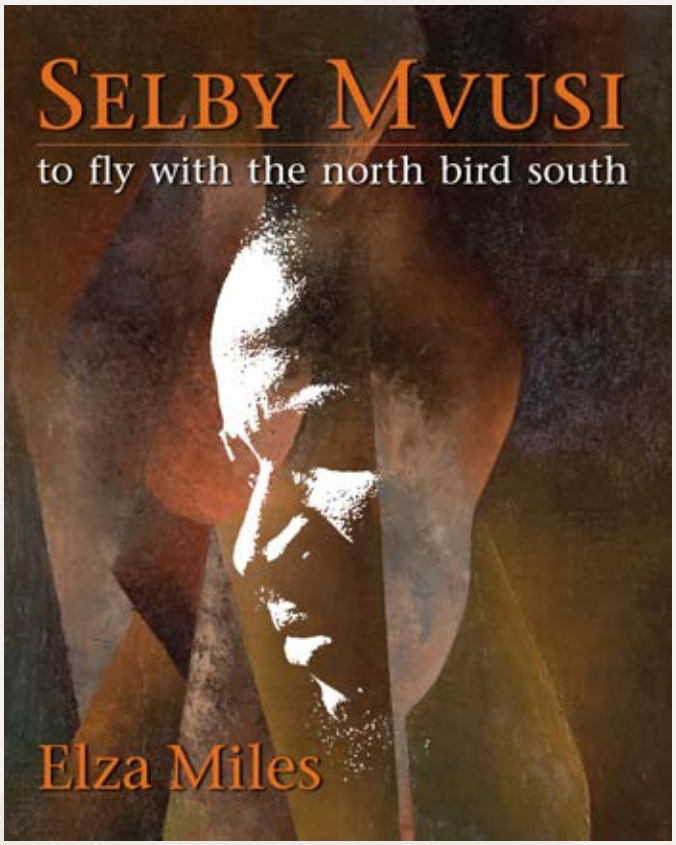
When it comes to academia, nothing is cast in concrete – unless it's the dictum that durability, strength and determination pay off when the going gets tough. Concrete facts are certainly the forte of Dr Bolanle Ikotun, an expert in concrete technology who has come a long way since her early days as a researcher. Just over six years ago, in 2010, she won a Developing Researcher Award in Unisa's Women in Research Awards. Today, she has shown her staying power as a researcher by winning a Resilience in Research Award. Ikotun, a senior lecturer in civil engineering, has authored and co-authored about 17 articles in different accredited journals and peer-reviewed conference proceedings. She also serves as a reviewer for a number of reputable journals. Her research interests are in concrete mix design, concrete structural and durability properties testing, chemical deterioration of concrete, mechanical testing of concrete, concrete quality optimisation techniques and investigation of extenders as they affect mortar and concrete properties.

Youngest Woman Doctoral Graduate Award

Dr Patricia Makoni – Department of Finance, Risk Management and Banking, College of Economic and Management Sciences

International finance and the ancient African healing tradition of ubungoma may seem poles apart but Dr Patricia Makoni, winner of the 2016 award for youngest female doctoral graduate at Unisa, has brought the two worlds together. On the one hand, Makoni, a senior lecturer in international finance and investment, finds her work as an academic fascinating, especially given the shifts in South Africa's currency and investment status. On the other hand, her role as a sangoma enables her to engage indigenous knowledge systems to help people in all facets of their lives. "Ubungoma is not a choice; it's a calling," says Makoni, who was initiated as a sangoma a few weeks before graduating from Wits University with her PhD in foreign direct investment and foreign portfolio investment, and the role of financial market development in selected African countries. "Who said that you can't be a sangoma in the professional space?"

2016 Hiddingh-Currie Award



Unisa's annual Hiddingh-Currie award is a prestigious annual research prize for authors of published works within Unisa Press. The aim of the award is primarily to encourage and nourish specialised skills in academic research and scholarly publishing.

Named after Dr Willem Hiddingh, one of the first advocates in the Cape Colony, and Sir Donald Currie, an early benefactor of higher education in South Africa and the United Kingdom, the award specifies that the recipient must be an academic or artistic work of the highest quality.

It should also contribute to the understanding or development of a discipline or work that addresses a specific need or problem in society. Contenders are drawn from the books published by Unisa Press in the previous year.

The 2016 winner was *Selby Mvusi: To fly with the north bird south*, by Elza Miles.

2016 Apex Awards

The Apex (Accelerated Professional Excellence) Awards for Full Professors were launched in 2008 to acknowledge and incentivise full professors who demonstrated consistent meritorious performance in their positions for a period of at least five years. The rationale for instituting the APEX Awards for Full Professors was that professors form the core subject matter expertise in the University and serve as role models and mentors for other academic employees. They should therefore be acknowledged and affirmed in this role.

Since 2015, the prestige of the APEX awards has been elevated by increasing the minimum requirements to include, amongst others, an NRF rating of at least C1.

The 2016 Apex Award winners were:

Professor Themba Dube
(College of Science, Engineering and Technology)

Professor Michelle Kelly-Louw
(College of Law)

Professor Christo Lombaard
(College of Human Sciences)

Professor Kopano Ratele
(Institute for Social and Health Studies)

Professor Mohamed Seedat
(Institute for Social and Health Studies)

Research dashboard

RESEARCH OUTPUTS

Knowledge is the currency of a university and through its research endeavours Unisa is generating new knowledge that would not only help explain some of the universe's workings and mysteries, but would also assist in solving real-world problems. The university's research agenda is informed by the needs of our country and the challenges our continent are facing. Unisa's research efforts culminate and are shared in published research findings and the completion of postgraduate degrees.

A dedicated research portfolio, clear research strategy and significant investments in resources and support for researchers have seen a positive growth in the university's research outputs and its positioning as a university that is serious about research.

Research publication outputs

The table below illustrates the positive year-on-year growth in research outputs over the past five years.

In 2016, the **number of units submitted** to the Department of Higher Education and Training for books and book chapters showed **a significant increase from 78.28 to 268.17**

Table 1: Research publication outputs, 2012 to 2016

Publication	2012	2013	2014	2015	2016
Journal articles	811.43	923.70	1027.67	1165.74	1118.63
Books/Book chapters	32.45	38.21	66.56	78.28	268.17
Conference proceedings	47.64	68.13	78.61	98.73	93.58

Master's and doctoral outputs

To build a knowledge-based economy South Africa has to increase its number of high-level qualifications. The NDP 2030 has set a target of 100 doctoral graduates per one million of the population by 2030. This would translate into 5 000 PhD graduates per annum in 2030.

In 2016, Unisa performed well by delivering no fewer than **1 043 master's and doctoral graduates.**

Table 2: Master's and doctoral graduations by college, 2012 to 2016

College and level	2012	2013	2014	2015	2016
Accounting Sciences	3	6	15	14	15
Doctoral degrees	2	2	5	1	3
Master's degrees	1	4	10	13	12
Agriculture and Environmental Sciences	16	44	66	66	77
Doctoral degrees	1	7	19	8	14
Master's degrees	15	37	47	58	63
Economic and Management Sciences	520	401	423	460	579
Doctoral degrees	26	16	33	30	54
Master's degrees	494	385	395	430	525
Education	104	123	155	162	140
Doctoral degrees	31	56	48	65	64
Master's degrees	73	67	107	97	76
Human Sciences	219	266	420	273	298
Doctoral degrees	65	89	124	100	118
Master's degrees	154	177	296	173	180
Law	91	125	161	133	160
Doctoral degrees	13	18	22	18	25
Master's degrees	78	107	139	115	135
Science, Engineering and Technology	30	35	53	63	60
Doctoral degrees	14	13	17	13	18
Master's degrees	16	22	36	50	42
Graduate School of Business Leadership	456	230	352	393	470
Doctoral degrees	10	7	10	18	29
Master's degrees	446	323	342	375	441
Total for Unisa	1439	1330	1650	1564	1799
Doctoral degrees	162	208	278	253	325
Master's degrees	1277	1122	1372	1311	1474

Research dashboard

Table 3: Master's and doctoral students by gender

Qualification level	Gender	2012	2013	2014	2015	2016
Doctoral	Female	62	82	93	86	133
	Male	100	146	185	18	220
Doctoral Total		162	208	278	253	325
Masters	Female	549	480	618	618	643
	Male	728	642	733	693	831
Masters Total		1277	1122	1372	1311	1474

Table 4: Master's and doctoral students by race

Qualification	Race	2012	2013	2014	2015	2016
Doctoral degrees	African	89	123	186	175	230
	Coloured	0	5	5	5	10
	Indian	9	9	13	16	14
	White	63	70	71	56	63
	No Information	1	1	3	1	8
Total		**162**	**208**	**278**	**253**	**325**
Master's degrees	African	823	685	890	913	1 059
	Coloured	35	36	54	45	65
	Indian	162	129	123	110	133
	White	255	255	267	214	209
	No Information	2	17	38	29	25
Total		**1277**	**1122**	**1372**	**1311**	**1491**

Table 5: Demographical composition of master's and doctoral supervisors

	2012	2013	2014	2015	2016
African	429	472	524	563	707
Coloured	29	30	33	39	46
Indian	44	50	55	63	76
White	596	624	623	633	709

National Research Foundation rating and evaluation

The National Research Foundation (NRF) evaluation and rating system judges the standing of individuals on the basis of their research outputs. In this respect it differs from often used rating and ranking systems that judge the standing of individual publications (impact factors) or the university in its entirety (university rankings).

There is a growing participation in the NRF evaluation and rating system not only by South African higher education researchers, but by researchers from all over the world. The rating system gauges researchers' standing in relation to other researchers in their disciplines.

There are four main rating categories:

- **A rating:**
  Awarded to researchers who are unequivocally recognised by their peers as leading international scholars in their field for the high quality and impact of their recent research outputs

- **B rating:**
  Awarded to researchers who enjoy considerable international recognition by their peers for the high quality and impact of their recent research outputs

- **C rating:**
  Awarded to established researchers with a sustained recent record of productivity in the field and who are recognised by their peers as having:
  - produced a body of quality work, the core of which has coherence and attests to on-going engagement with the field
  - demonstrated the ability to conceptualise problems and apply research methods to investigating them.

- **Y rating:**
  Awarded to young researchers (40 years or younger), who have held a doctorate or equivalent qualification for less than five years at the time of application, and who are recognised as having the potential to establish themselves as researchers within a five-year period after evaluation, based on their performance and productivity as researchers during their doctoral studies and/or early postdoctoral careers.

Sub-categories within the above main categories (for example A1 and A2) serve to further distinguish the exact nature of the rating.

NRF-rated research awards

A total of 49 NRF-rated awards including new, re-rated and researchers who joined with a rating were made in 2016. This figure was made up nine Y-rated researchers, seven B-rated researchers, and 33 C-rated researchers.

At the end of 2016 Unisa had **207 rated researchers** which accounts for an **increase of 12.1%** over the previous year's figures.

Table 6: NRF-rated researchers from 2012-2016 including a breakdown per NRF category

NRF categories	2012	2013	2014	2015	2016
A	1	2	2	2	2
B	9	11	14	18	22
C	86	101	110	128	144
Y	11	15	24	34	39
L	2	2	1	0	0
Total	**109**	**131**	**151**	**182**	**207**

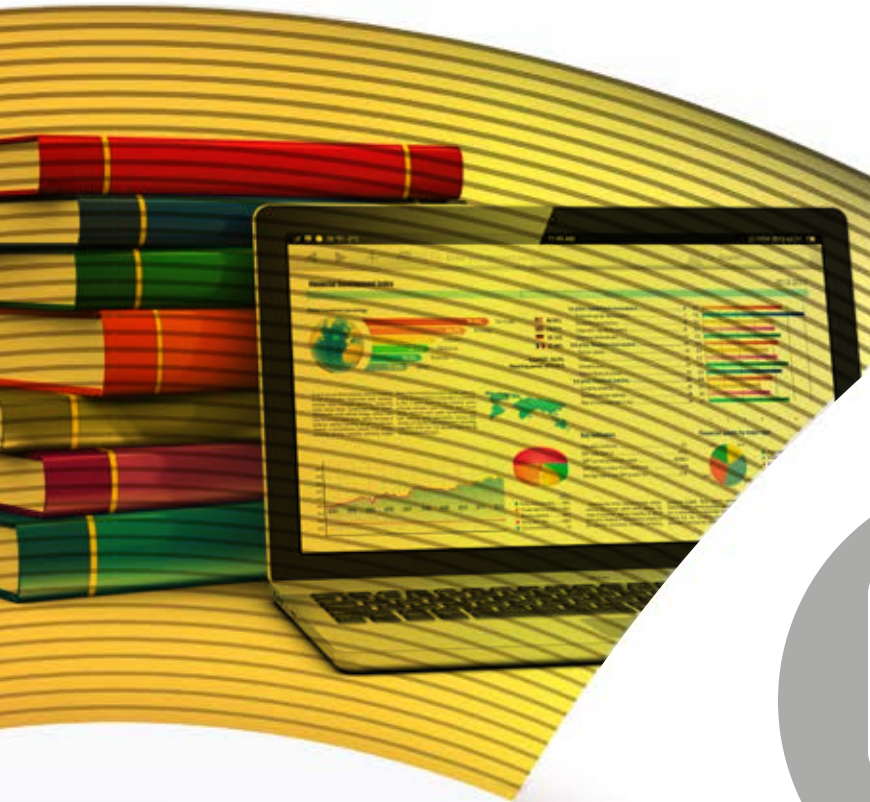
Research dashboard

Table 7: Academics who were newly rated, re-rated, or who joined Unisa with a rating

NRF Ratings 2017							
No.	**Title**	**Surname**	**Name**	**College**	**School/Dept.**	**Rating**	**Status**
1.	Prof.	Dedering	Tilman	CHS	History	B2	Re-rating
2.	Prof.	Liebenberg	Elri	CAES	Geography	B2	New
3.	Prof.	Adesina	Jimi	CGS	Research Chair in Social Policy	B3	New
4.	Prof.	Bosman	Philip	CHS	Biblical and Ancient Studies	B3	New
5.	Prof.	Dube	Themba	CSET	Research Chair Topology	B3	Re-rating
6.	Prof.	Ray	Sekhar	CSET	Physics	B3	Re-rating
7.	Prof.	Rwelamila	Pantaleo	SBL	Project Management	B3	Re-rating
8.	Prof.	Bosch	Sonja	CHS	African Languages	C1	Re-rating
9.	Prof.	Swanepoel	Petrus	CHS	Afrikaans and Theory of Literature	C1	New
10.	Prof.	Angelopulo	George	CHS	Communication Science	C2	New
11.	Prof.	Botha	Pieter	CHS	New Testament and Early Christian Studies	C2	New
12.	Prof.	Brown	Leslie	CAES	Environmental Sciences	C2	New
13.	Prof.	Eloff	Mariki	CSET	School of Computing	C2	New
14.	Prof.	Horn	André	CAES	Geography	C2	Re-rating
15.	Prof.	Makina	Danial	CEMS	Finance, Risk Management and Banking	C2	New
16.	Prof.	Mulaudzi	Phalandwa	CGS	Interdisciplinary Research Institutes	C2	New
17.	Prof.	Oguttu	Annet	CLAW	Mercantile Law	C2	Re-rating
18.	Prof.	Sewdass	Nisha	CEMS	Business Management	C2	New
19.	Prof.	Smit	Brigitte	CEDU	Educational Studies	C2	Re-rating
20.	Prof.	Swart	Lu-Anne	CGS	Institute of Social and Health Sciences	C2	New
21.	Prof.	Udjo	Eric	CEMS	Demographic Research	C2	New
22.	Prof.	Veeredhi	Rao	CSET	Engineering	C2	New
23.	Dr	Clasquin-Johnson	Michel	CHS	Religious Studies and Arabic	C3	New
24.	Prof.	Dames	Gordon	CHS	Discipline of Practical Theology	C3	New
25.	Dr	Debusho	Legesse	CSET	Statistics	C3	New

NRF Ratings 2017							
No.	**Title**	**Surname**	**Name**	**College**	**School/Dept.**	**Rating**	**Status**
26.	Dr	Djoyou Kamga	Serges	CGS	Thabo Mbeki African Leadership Institute	C3	New
27.	Prof.	Du Plessis	Charmaine	CHS	Communication Science	C3	New
28.	Prof.	Ferreira	Johannah	CEDU	Teacher Education	C3	New
29.	Prof.	Govender	Doraval	CLAW	Criminology and Security Science	C3	New
30.	Prof.	Jafari	Hoosein	CSET	Mathematical Sciences	C3	New
31.	Prof.	Lombardi	Enrico	CGS	Interdisplinary Research	C3	Re-rating
32.	Prof.	Maritz	Jeanette	CHS	Health Sciences	C3	New
33.	Prof.	Mavhandu-Madzusi	Azwihangwisi	CHS	Health Studies	C3	New
34.	Prof.	Naidoo	Inderasan	CSET	Mathematical Sciences	C3	Re-rating
35.	Prof.	Nchindila	Bernard	CHS	English Studies	C3	New
36.	Prof.	Nel	Juan	CHS	Psychology	C3	New
37.	Prof.	Ngole-Jeme	Veronica	CAES	Environmental Sciences	C3	Re-rating
38.	Prof.	Padayachee	Keshnee	CGS	Institute for Science and Technology Education	C3	New
39.	Prof.	Stoffberg	Gerhard	CAES	Environmental Sciences	C3	New
40.	Prof.	Vambe	Maurice	CHS	English Studies	C3	New
41.	Dr	De Wet	Chris	CHS	New Testament and Early Christian Studies	Y1	New
42.	Prof.	Stoop	Philip	CLAW	Mercantile Law	Y1	New
43.	Prof.	Viljoen	Sue-Mari	CLAW	Public, Constitutional and International Law	Y1	New
44.	Dr	Archer	Elizabeth	Research	Institutional Research	Y2	New
45.	Prof.	Moloi	Sabata	CSET	Physics	Y2	New
46.	Prof.	Mtshiselwa	Ndikho	CHS	Old Testament and Ancient Near Eastern Studies	Y2	New
47.	Prof.	Van Staden	Wynand	CSET	School of Computing	Y2	New
48.	Dr	Lu	Xiaojun	CSET	Material and Process Synthesis (MaPS) Research Unit	Y2	New
49.	Dr	Laphakga	Tshepo	CHS	Philosophy, Practical and Systematic Theology	Y2	New

Research programmes and grants



MASTER'S AND DOCTORAL SUPPORT PROGRAMME (MDSP)

In response to the challenges of shortage of fulltime equivalent (FTE) researchers, which is made obvious through the annual science indicator published by the Department of Science and Technology, Unisa crafted the Master's and Doctoral Support Programme (MDSP) in 2008. The overall aim of the programme is to effect equity and redress by providing targeted support to members of staff in general, and in particular to African, female and disabled researchers pursuing master's and doctoral qualifications.

An important aspect of the programme is the improvement of staff qualifications at the highest levels, thereby responding directly to the Unisa 2015 strategic targets of incrementally developing research human capital development, enabling a research culture and improving research outputs.

The programme is modelled on and designed to complement the National Research Foundation's (NRF's) Thuthuka Programme. It provides support to Unisa staff members who do not qualify for NRF Thuthuka support because they are (a) working on a master's degree, (b) above the age of 45 or (c) not South African citizens (note that some of these elements of the Thuthuka programme were changed in the redesigned programme implemented in 2011).

Table 1: MDSP grants, 2012 to 2016

	2012	2013	2014	2015	2016
Master's and Doctoral Support Programme	46	99	88	67	49
Breakdown by race					
African	17	58	40	38	30
White	22	35	34	26	16
Coloured	4	3	3	1	1
Indian	3	3	11	2	2

MDSP spotlight (master's candidate): Tshego Sehlodimela

Tshego Sehlodimela

Inquisitive thinking and strong self-discipline are two of the most valuable skills that Tshego Sehlodimela has learnt while studying towards her master's degree in English through the MDSP. "At first, I struggled to think and read like a researcher and had to retrain my mind. Now I know how to do research and am grateful for having learnt new skills," says this Unisa Press editor, whose master's research is on the use of online collaborative groups (wikis) for academic writing.

She sees her master's studies as a win-win exercise for herself and for Unisa. "I have learnt how to do research and stretch myself mentally, and once I have my master's, I can possibly pursue a career as an academic.

"Unisa will gain too, because my master's will contribute to the university's research output and the statistics on the representation of African academics, as well as to skills development. Improving one's qualifications has many advantages both for staff and Unisa."

MDSP spotlight (doctoral candidate): Gladys Mokwena

Gladys Mokwena

Adult Basic Education lecturer Gladys Mokwena believes that to do justice to her postgraduate students, she needs to have a doctorate. "As an academic who wants to empower my students, it is important for me to have a doctorate," she says. Mokwena applied for MDSP funding knowing full well that she would have to juggle her studies with a heavy teaching load during her three years on the programme.

"I knew it was going to mean hard work but I love everything about my work in adult basic education and it is worth it," says Mokwena. The topic of her thesis is vocational training for unemployed women in Winterveld near Pretoria.

"The benefits of having a doctoral degree are very, very important. But don't wait until you are 50 years old. Do it while you are still young," she advises.

POSTDOCTORAL FELLOWSHIP SUPPORT PROGRAMME (PFSP)

Postdoctoral research is usually undertaken by individuals who have recently completed their doctoral studies. The reasoning behind this is that it gives these individuals an exclusive opportunity to improve their understanding of a specialist subject and, in the process, imbue them with unique and sought-after skills.

Unisa – a university that is committed to excellence in research – established its Postdoctoral Fellowship Support Programme (PFSP) in 2009. The advancement of these fellows is seen as essential not only in terms of their own individual training but in terms of elevating the status of the university as a whole through the fellows' research outputs. The programme recruits doctoral graduates holding doctoral qualifications that are not from Unisa and that are not older than five years. The programme annually advertises available postdoctoral positions.

Table 2: Participants in the PFSP, 2012 to 2016

	2012	2013	2014	2015	2016
Postdoctoral Fellowship Support Programme	23	28	75	122	107
Breakdown by race					
African	15	19	46	60	70
White	7	7	8	20	14
Coloured	0	1	9	22	4
Indian	1	1	12	20	19

EMERGING RESEARCHER SUPPORT PROGRAMME (ERSP)

In South Africa, highly productive researchers are an ageing cohort. The National Survey of Research and Experimental Development cite that the levels of fulltime equivalent (FTE) researchers in South Africa are dwindling at 1.8% per 1 000 total in the National System of Innovation. To some extent this picture is also reflected by Unisa's profile of academic staff members holding doctoral qualifications (ERSP).

The Emerging Researcher Support Programme is Unisa's response to the challenges posed by a shortage of FTE researchers and a stagnating total research output. The goal of this competitive programme is to help permanent research staff who have completed doctoral degrees in the last five years to develop as researchers, and to increase their measurable research output in order to eventually obtain a National Research Foundation rating. The support programme does so by providing funding for research expenses, relief lecturers and bursaries for postgraduate students.

Table 3: Participants in the ERSP, 2013 to 2016

	2013	2014	2015	2016
Emerging Researcher Support Programme	3	5	5	1
Breakdown by race				
African	3	1	4	1
White	0	4	1	0

VISIONKEEPERS PROGRAMME (VKP)

Goal 1 of the Unisa Research Strategy is to increase innovative research and research capacity. The VisionKeepers Programme (VKP) is a new research excellence capacity development initiative, managed by the Research Department to strengthen research and scholarship at Unisa. As Unisa currently faces the major challenge of attracting, developing and retaining young researchers, the goal of the VKP is to support the development of highly competent and confident young researchers who have solid research plans.

The main objectives of the VKP are to:

- address the problem of the ageing research-productive cohort
- accelerate the development of the next generation of researchers
- support transformation of the research cohort
- improve the number of publications in high impact factor journals, thus enhancing the quality of research published by Unisa researchers
- increase the number of NRF-rated researchers at Unisa.

The programme supports young researchers by providing funding for either or both:

- pursuing research work with a view to producing high quality research publications
- hosting a research mentor from another institution

Table 4: Participation in the VKP, 2012 to 2016

	2012	2013	2014	2015	2016
VisionKeepers Programme	10	11	7	7	1
Breakdown by race					
African	8	8	5	6	1
White	2	3	2	1	0

ACADEMIC QUALIFICATION IMPROVEMENT PROGRAMME (AQIP)

Initiated in 2013, the goal of the Academic Qualification Improvement Programme (AQIP) is to enable Unisa's permanent academic staff to pursue senior qualifications (master's and doctoral degrees) on a fulltime basis. This competitive programme complements one of the goals of both the Department of Higher Education and Training and Unisa, namely to develop staff towards the attainment of doctoral qualifications. The biggest challenge facing higher education institutions, including Unisa, is the inability to fund academic staff members' study leave. AQIP is a response to this challenge.

Table 5: Participation in AQIP, 2013 to 2016

	2013	2014	2015	2016
Academic Qualification Improvement Programme	47	62	45	33 (only available in first quarter)
African	31	38	30	16
White	13	19	14	12
Coloured	0	1	0	0
Indian	3	4	5	0

RESEARCH PROFESSORS PROGRAMME (RPP)

In 2010 Unisa introduced a new academic rank – that of Research Professor. This is a mechanism for, among other things, increasing dedicated research and innovation participation, increasing specialised expertise and improving research outputs. Research Professors are appointed in three-year cycles. The table below indicates participation in the Research Professors Programme (RPP) from 2012 to 2016.

Table 6: Participation in the RPP, 2012 to 2016

	2012	2013	2014	2015	2016
Research Professors Programme	13	21	17	19	19
Breakdown by race					
African	3	2	1	2	2
White	10	19	16	17	17

INNOVATION SUPPORT PROGRAMME (ISP)

Launched in 2013, the aim of the Innovation Support Programme (ISP) is to stimulate innovative research through seed funding. The programme provides funding to researchers to develop research projects that offer innovative solutions to the challenges that society faces and in so doing strengthen their ability to apply innovative problem-solving techniques to research problems and to increase the number of high-quality innovative research projects.

Table 7: Participation in the ISP, 2013 to 2016

	2013	2014	2015	2016
Innovation Support Programme	5	10	4	4
Breakdown by race				
African	5	5	2	1
White	0	5	2	3

ISP spotlight: Bojane Segooa

Bojane Segooa

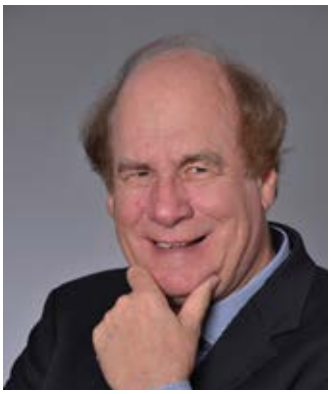
Many young South Africans follow certain study or career paths by default: without access to information about choices that match their strengths and interests, they may follow a particular direction more because it's available than because they feel passionate about it.

So strongly did Bojane Segooa, a senior lecturer in financial accounting, feel about the need to enable young people to make informed choices that she dug into her own pocket to pay a developer and a career guidance counsellor to help her begin developing LEVELSAPP.

LEVELSAPP is a web-based app for grade 10 to 12 learners. The app is now fully developed and learners are able to register on it, input their academic results and select a preferred faculty. The app then displays all the undergraduate degrees that the learner qualifies to study at all South African universities. It will also show the duration of studies, cost of tuition and entry requirements. Segooa brought her innovation to the attention of Unisa's Directorate: Innovation and Technology Transfer by entering its 2016 Innovation Support Programme, intended to help Unisa's staff develop their innovations through grants of up to R100 000. She was one of four successful candidates in 2016.

"With the funding from the Innovation Support Programme, it was possible for me to enhance the app in a way I might not have been able to on my own."

ISP spotlight: Professor Lukas Snyman



Prof. Lukas Snyman

If Professor Lukas Snyman has his way, the power to use affordable renewable energy would be within easy reach of all South African households.

He and his students at the College of Engineering have come up with not just one but two ways for households to supply their own electricity. These two projects, and a third one revolving around 'photonics on chip' technology, made the grade in Unisa's 2016 Innovation Support Programme for the university's staff.

One of the two power projects is a small household rooftop wind turbine with an innovative blade design and an innovative charging system for leading energy into the home at low cost.

The second project is also a rooftop-based, low-cost energy invention, but using thermal energy from the sun. It's designed to convert thermal energy to electricity at a much lower cost than conventional photovoltaic systems, using a special thermal absorber.

The third project used photonics on chip technology and involved developing a prototype micro light emitter on a standard integrated circuit chip, in association with ESIEE in France.

Photonics on chip has many possible applications, from super-high-speed data communications to bio sensing (monitoring human vital parameters such as blood pressure and sugar levels directly on chip) and monitoring light levels, ambience and pollution levels.

Explaining his love of inventing, Snyman, who is the Director of Unisa's School of Engineering, says: **"To create and see something work for the first time makes me tick much faster."**

TALENT INNOVATION PROGRAMME (TIP)

The Talent Innovation Programme (TIP) develops and nurtures innovative student research projects. Unisa's aim is to attract, develop and retain young researchers that have the capacity to conceive and execute innovative research projects. TIP is targeted at registered UNISA students who have the capacity to conceive innovative solutions to the challenges that society faces. The programme provides seed funding for registered students for proof of concept of novel or innovative solutions to research problems.

Table 8: Participation in the Talent Innovation Programme, 2013 to 2016

	2013	2014	2015	2016
Talent Innovation Programme	2	4	2	3
Breakdown by race				
African	2	4	1	3
White	0	0	1	0

Some societal problems may seem insurmountable, but an innovative idea with some financial backing can be life changing. Unisa students with innovative ideas for solving these problems can enter TIP which offers grants to start developing their ideas into workable solutions.

The 2016 TIP saw three students winning grants: Godisang Lefifi, who completed his final year of Electronic Engineering in 2016, Miriam Farai Siwela, at the time a PhD student in Educational Leadership and Management, and Sandile Dladla, who completed a BCom Accounting degree in October 2016.

TIP spotlight: Godisang Lefifi

Godisang Lefifi

Chilling news reports about trapped miners and his own experiences underground made Godisang Lefifi think. He had worked underground while employed at a company supplying safety systems, and used to wonder who would help him if he found himself in difficulties.

While studying engineering through Unisa and running his own electronics business, he came up with the idea of developing a device – similar to a car-tracking system – that would detect the location of miners trapped underground and determine if they were alive.

Lefifi's idea was to equip rescue teams and miners going underground with a device weighing no more than three kilograms, clipped to their belts. If noxious gases such as methane were present at unsafe levels, the device would alert miners. If there were no dangerous gases, it would remain inactive until an accident.

An accident would typically be a fall of ground and would trigger the system. If miners are trapped, the rescuers' device would send a signal underground to locate the miners via their devices.

Lefifi's idea impressed the TIP adjudicators, who awarded him a grant to assist in developing a working prototype of his device.

TIP spotlight: Miriam Siwela

Miriam Siwela

Low pass rates in mathematics and science, learner-on-learner violence, bullying, substance abuse and other alarming trends in South African education are depressing but Unisa PhD student Miriam Siwela believes these problems can be successfully addressed.

Her answer is a holistic approach that ensures all stakeholders take responsibility for their part in the education system and collaborate accordingly. With this in mind, she has designed a model of stakeholder collaboration that she refers to as Educating Learners in Totality (ELT).

This model targets all education stakeholders and takes into account the cognitive, physical, psychosocial, volitional and moral aspects of education.

Siwela, who has since completed a PhD, is using her TIP grant money to start putting the ELT model into practice. It will also take time, resources and hard work to get people working together. "This is my passion and I am committed to giving it my all," she says.

TIP spotlight: Sandile Dladla

Movie and music streaming is a reality for some South Africans, but accounting graduate Sandile Dladla's idea for an entertainment kiosk could be music to the ears of low-income consumers, as well as for local music and film content creators.

The kiosks, he says, will open up the market for existing and upcoming artists and film makers by reaching mass demographics cost-effectively. Consumers will also get what they want: convenience and affordability.

His envisaged music-and-movie kiosks would be similar to banks' ATMs and would be placed in high-density areas such as taxi ranks.

Inside the kiosk, the customer would log onto an online store and view the movie and music selection available, download their choice onto a device (such as a USB stick) or write it to a CD or DVD and, after paying, take it home.

The TIP grant funding has given him the means to make contact with patent firms and conceptualisation consultants to help bring his media kiosks to life.

Sandile Dladla

WOMEN IN RESEARCH (WIR)

The purpose of the Women in Research (WiR) programme is to support women researchers who wish to undertake high-quality collaborative research projects. The programme provides research support funds to WiR groups and not to individual projects. This programme directly supports the transformation agenda of the university.

Table 9: Participation in the WiR programme, 2012 to 2016

	2012	2013	2014	2015	2016
Women in Research	23	4	3	2	16
Breakdown by race					
African	10	1	0	1	4
White	12	2	3	1	12
Coloured	1	0	0	0	0
Indian	0	1	0	0	0

EXTERNAL GRANTS

The external grants are either funded by the National Research Foundation (NRF) or awarded by other external entities. Unisa saw an increase in both, which signifies that the university's researchers are giving attention to this matter even though still more can be done.

The Research Support Directorate also prioritise the mobilisation of externally funded postgraduate scholarships. In 2016 the NRF-funded scholarships amount to R18 561 310. For the first time ever the directorate was able to utilise all the allocated block grant scholarships awarded to it. As a result, in September 2016, the NRF provided additional funds for Unisa students which amounted to R 2.81 million.

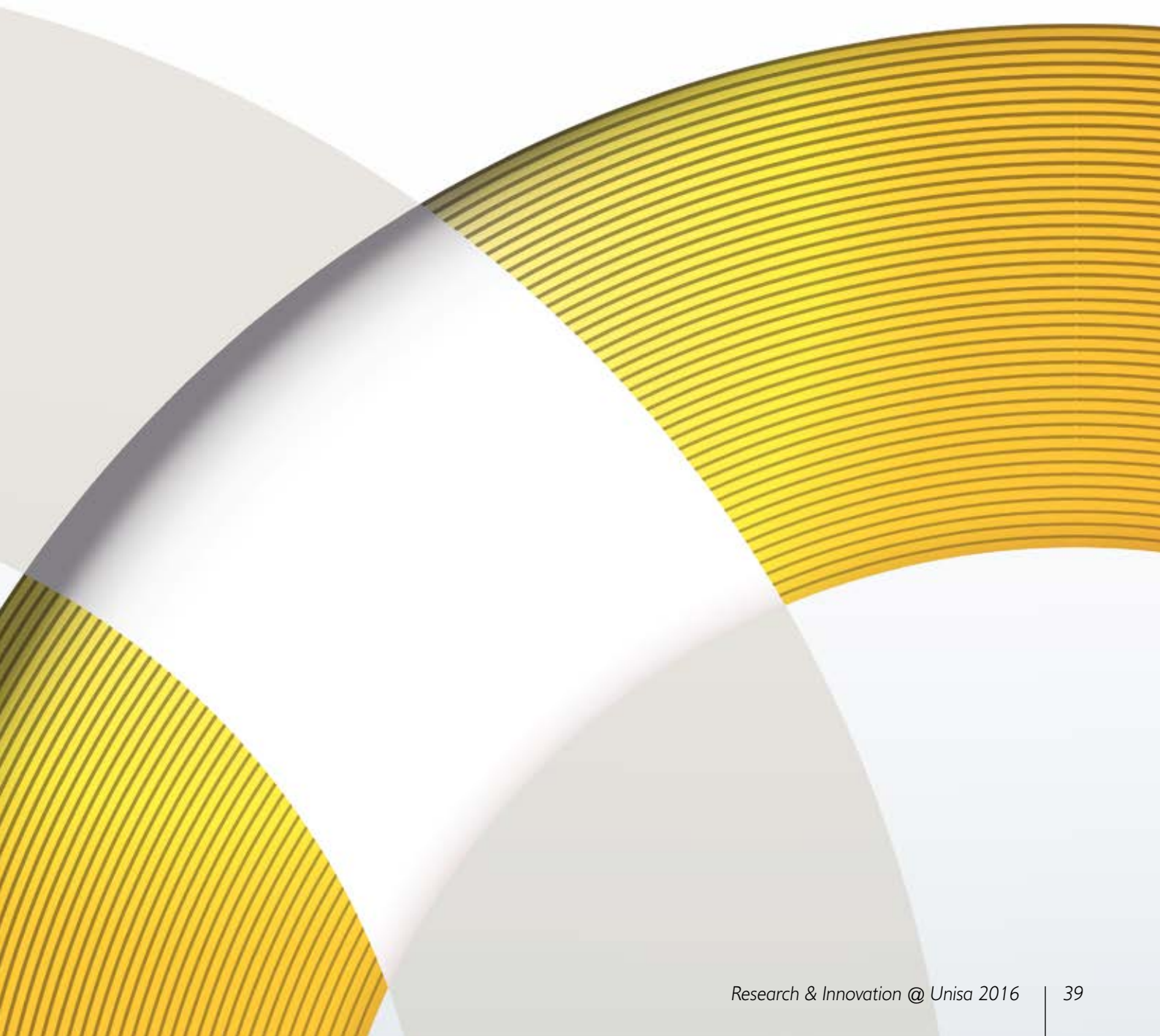
Grants received for 2016 amounted to R 52.6 million and the breakdown of those funds is provided in the table below.

Table 10: External research grants 2016

GRANTS	UNISA	
	Number	Amount Awarded
National Research Foundation grants	**237**	**43 509 066**
Collaborative Postgraduate Training	2	1 490 378
Community Engagement Programme	1	120 680
Competitive Programme for Rated Researchers	14	3 427 108
Competitive Support for Unrated Researchers	3	453 751
Department of Science and Technology – National Research Foundation Conference Fund	2	950 000
Department of Science and Technology – National Research Foundation Fellowships for Early Career Researchers from the United Kingdom	1	220 000
Economic and Social Research Council / National Research Foundation Higher Education In Africa	1	365 000
Human Capital Development for Multi-Wavelength Astronomy	1	65 000
Indigenous Knowledge Systems	2	378 286
International Research Grants – China / South Africa Research Cooperation Programme	1	138 930
International Research Grants – Taiwan /South Africa Research Cooperation Programme	1	144 000
International Research Grants – United Kingdom / South Africa Researcher Links Grants for Travel	5	150 000
International Science and Technology Agreements	10	609 938
Knowledge Interchange and Collaboration	20	506 791
Nanotechnology Flagship Programme	2	1 026 507
National Equipment	1	1 193 800
Research Career Awards	1	550 000
Research Development Grants for nGAP Scholars	3	90 000
Research Development Grants for Y-Rated Researchers	3	453 271

Research programmes and grants

National Research Foundation grants (continued)	Number	Amount awarded
Scholarships & Fellowships – Department of Science and Technology / National Research Foundation Innovation Postdoctoral Fellowships	3	741 509
Scholarships & Fellowships – Extended support for scholarships and fellowships	2	170 000
Scholarships & Fellowships - Innovation Doctoral Scholarships	30	3 862 604
Scholarships & Fellowships - Innovation Honours Block Grants	2	500 000
Scholarships & Fellowships - Innovation Master's Scholarships	24	2 600 000
Scholarships & Fellowships – Innovation Scholarships for Non-South Africa Citizen	1	305 000
Scholarships & Fellowships - National Research Foundation /DAAD Scholarship	1	100 000
Scholarships & Fellowships - National Research Foundation Free-standing Postdoctoral Fellowships	2	455 842
Scholarships & Fellowships - Part-time doctoral studies	2	120 000
Scholarships & Fellowships – Sasol Inzalo Foundation	1	110 000
Scholarships & Fellowships – Scarce Skills Development Fund – Honours Block Grant (Additional Allocations)	1	1 750 000
Scholarships & Fellowships - Scarce Skills Doctoral Scholarships	21	2 887 097
Scholarships & Fellowships - Scarce Skills Master's Scholarships	24	2 460 000
Scholarships & Fellowships - Scarce Skills Postdoctoral Fellowships	2	655 000
Scholarships & Fellowships - Scholarships & Fellowships Programme	10	1 624 258
South African Nuclear Human Asset Research Programme	1	1 200 000
South African Research Chairs	4	9 470 011
Special Transformation Awards – Hamilton Naki Award	1	200 000
Thuthuka	29	1 684 305
Vulnerable Disciplines – Developing Health Sciences Research	2	280 000
NRF Rating Incentive	**163**	**6 628 411**
Incentive Funding for Rated Researchers	163	6 628 411
Other External Grants	**11**	**2 463 190**
Africalics – African Centre for Technology Studies	1	229 239
BMI Risk Analytics Research Grant	1	397 050
CS4HS – Google Ireland Trust	1	20 633
Department of Science and Technology – National Research Foundation Centre of Excellence	1	150 000
Forum for African Women Educationalists	1	31 225
National Institute for The Humanities and Social Sciences	1	250 000
Oppenheimer Memorial Trust	1	33 271
South African Medical Research Council / FORTE Collaborative Research Project	1	200 000
TRUST AFRICA	1	351 769
Water Research Commission	2	800 000
TOTAL	**411**	**52 600 667**



Research chairs and institutes

RESEARCH INSTITUTES AND OTHER RESEARCH ENTITIES

Unisa takes great pride in its institutes, bureaux and other research entities dedicated to a wide variety of research areas. These units are just as active as the various chairs, and involve academics, students and the community.

Acting head of the institute
Dr Busani Mpofu

Archie Mafeje Research Institute (AMRI)

The Archie Mafeje Institute for Applied Social Policy Research (AMRI) is a policy research institute dedicated to promoting the legacy of the late Professor Archie Mafeje, in pursuit of progressive change in African society.

Dr Busani Mpofu is the acting head of AMRI, which provides a platform for African scholars and analysts to become thought leaders for social transformation and Pan-African agendas on the continent. The institute strives to apply fresh thinking and develop novel policy ideas on power, knowledge and identity, decoloniality, land reform, agrarian questions and agricultural development, African social formations, African families and social policy, governance and social justice (nation building and social cohesion), development, inequality and poverty and state, and on conflict, violence and ideology. The aim is to address poverty, inequality, social disintegration, social injustice, the collapse of community and family institutions, and other societal ills through research that promotes decolonising, indigenising, diversifying, and depatriarchalising knowledge and the curriculum.

Head of the bureau
Prof. Deon Tustin

Bureau of Market Research (BMR)

The bureau is a research unit within the College of Economic and Management Sciences, and undertakes basic socio-economic market research and commissioned research. Basic research covers four areas, namely behavioural and communication research, demographic research, economic research and household wealth research. The BMR's research methodologies include conducting surveys through a wide range of interview modalities, including in-person, telephonic, computer-aided telephonic, email and web-based interviews, as well as in-depth focus group discussions.
Professor Deon Tustin is the head of the BMR, which is actively building fieldwork capacity in disadvantaged communities and has over the years empowered over 1 000 people from communities across the country.

Head of the institute
Prof. Vuyisele Msila

Institute for African Renaissance Studies (IARS)

Located within the College of Graduate Studies, IARS was established in 2003 to provide intellectual leadership for the African Renaissance, utilising multi-, inter- and trans-disciplinary approaches. The institute's main activity is research, with special emphasis on academic publishing and postgraduate supervision. Thematic research areas include the African Renaissance, Africa's productive resources, Africa in the global system, African perspectives on environment, sustainable development and climate change, poverty eradication and food security, diplomacy and international relations, democracy and elections, and women, gender and power, to name but a few. In 2016 Professor Vuyisele Msila headed IARS, which houses the Unisa LittleTheatre, where the academy, the general public and civil society interact through theatre, public lectures, seminars and information exchange. The institute also runs a flagship programme on the management of democratic elections in Africa.

Research chairs and institutes

Head of the institute
Prof. Neil Eccles

Institute for Corporate Citizenship

The institute conducts critical academic research that influences and provokes business enterprises to change in ways that make them even more accountable to society. Through its research, the institute poses pertinent, often difficult questions about the role and contribution of business to sustainable development. It converts this research into tuition offerings, such as Sustainability and Greed, a signature module of the College of Economic and Management Sciences.

Professor Neil Eccles leads the institute, which has four active research programmes. These are the Exxaro Chair in Business and Climate Change, the Responsible Investment Programme, the Teaching Business Ethics Programme and the Information Security as Corporate Responsibility Programme.

Head of the institute
Prof Mpine Makoe

Institute for Open and Distance Learning (IODL)

Housed in the College of Graduate Studies, the institute's mandate is to position Unisa as a leading open and distance learning (ODL) university in Africa and the rest of the world. Its major role is to build ODL research capacity across the university, encourage Unisa staff to conduct ODL research, and coordinate research relevant to the strategic thematic areas set for ODL research at Unisa. These are online ODL, technology in ODL teaching-learning, the changing role of academics in ODL, assessment practices and student support in an ODL institution. The institute is led by Professor Mpine Makoe and was instrumental in Unisa's successful establishment of the local chapter of the Global Doctoral Consortium of the International Council for Distance Education.

Head of the institute Prof. John Faris

Institute for Dispute Resolution in Africa (IDRA)

Located in the College of Law, IDRA's research programme is directed towards building a body of knowledge based on humanistic values and promoting a harmony model of dispute resolution. This model is sensitive to the cultural context of Africa and the African Diaspora, and could serve humanity as a whole. IDRA's research is predominantly community based and vested in the lived experience of communities and their key knowledge holders. Thus, it seeks to revive knowledge embedded in communities on dealing with all kinds of disputes. In contrast with the conventional style of dispute resolution, community knowledge is grounded in traditional and community values, and emphasises mutual respect, equality and an appreciation of human interconnectedness.

Some of IDRA's most successful projects since 2012 are the South African San Dispute Resolution Project, involving the San community in Platfontein in the Northern Cape, and the Electoral Dispute Resolution Project in Ephraim Mogale District Municipality. These have in turn given rise to new projects, including the South African San Dispute Resolution Project. Professor John Faris is the head of the institute.

Executive director of the institute Dr Philani Mthembu

Institute for Global Dialogue (IGD)

For over 25 years, the institute has served an independent foreign policy think tank that analyses and promotes dialogue on the international political and economic environment and the role of South Africa and Africa within it. Initially founded in 1995 as a grant-funded foundation, it evolved into an institute and entered into a strategic agreement with Unisa in 2010 to pursue joint research, dialogue and publications. Dr Philani Mthembu is the Executive Director of the IGD, which does consultancy work for the South African government, international organisations and a number of major South African corporates that have invested in emerging markets.

The institute has three research programmes, namely South African foreign policy analysis, African studies and multilateral governance analysis, including multinational trade, international finance diplomacy, conflict in the Middle East and global governance.

Head of the institute Prof. Deirdre Byrne

Institute for Gender Studies

The institute promotes scholarship as a way of changing society in Southern Africa to make it more gender equitable. Its underlying philosophy is that raising awareness of gender is the only way to make progress in eliminating gender-based violence, homophobia, transphobia and discrimination against women in the workplace and in civil society. Professor Deirdre Byrne heads the institute, whose research is theory led and multidisciplinary, interdisciplinary and transdisciplinary. It coordinates research projects on gender and representation, gender and ODL and gender technology, and has an interdisciplinary honours programme in Gender Studies.

Prof. Nosisi Feza

Institute for Science and Technology Education (ISTE)

The Institute for Science and Technology Education (ISTE) evolved from what was originally known as CIMSTE – the Centre for Mathematics, Science and Technology Education. Unisa took over the centre in 2006 and renamed it ISTE. The institute now resides in the College of Graduate Studies and promotes inter-college collaboration on mathematics, science and technology education. Through this collaboration, ISTE coordinates the integration, tuition and development of modules for all formal and non-formal MST education programmes at Unisa.

Since 2009 the institute has annually presented a Winter School as part of its community service for the development of mathematics, science and technology educators. Another annual event is the ISTE Conference, which has been held in the Kruger National Park since 2010. Apart from it being a forum for established researchers to discuss their research, the conference has also provided novice researchers with immense opportunities to enhance their capacity.

The institute has five main lines of education research: mathematics, life sciences, physics, chemistry and information and communications technology (ICT). The head of the institute is Professor Nosisi Feza.

Research chairs and institutes

Institute for Social and Health Studies (ISHS)

As an Africa and community-centred research institute, the ISHS enacts critical scholarship to support safety, peace, situated psychologies, equality, generative identities and health within communities. The institute conducts its research through national, continental and global partnerships. The institute's niche research includes work in violence, injuries and peace, masculinities and men's studies, and trans-disciplinary African psychology. The ISHS is accredited as an internship and training site by the Health Professional Council of South Africa (HPCSA) and functions as a Safe Communities Certifying Centre. The ISHS is a vibrant intellectual hub for community engaged scholarship, and socially conscious, internationally recognised, established and emerging researchers. Professor Mohamed Seedat is head of the institute.

Head of the institute
Prof. Mohamed Seedat

Head of the institute Prof. Cornel du Toit

Research Institute for Theology and Religion

The institute was founded in 1975 to develop, manage and disseminate religious and theological research. Its South African Science and Religion Forum has convened annually since 1993 and is the only significant initiative of its kind in the country.

The institute's other interface with society, the Forum for Religious Dialogue, regularly presents research seminars. Professor Cornel du Toit is the head of the institute, which supervises master's and doctoral students, participates in international interdisciplinary research projects and has a strong commitment to community engagement.

Thabo Mbeki African Leadership Institute (TMALI)

As a partnership between Unisa and the Thabo Mbeki Foundation, TMALI is a vehicle for preparing the next generation of leaders for Africa's renewal – politically, socially, economically and culturally.

Since its launch in 2010, the institute has provided training to over 1 500 students, mainly through short learning programmes designed to produce change agents ready and able to address African issues. An example is the Course in African Political Economy, which is intended to familiarise participants with the elements of economic theory applicable to African economic challenges and discuss alternative approaches to the study of economics, globalisation and development in the context of Africa.

Former President Thabo Mbeki, Unisa's Chancellor, is the patron of TMALI, whose head is Professor Vusi Gumede.

Head of the institute Prof. Vusi Gumede

ENDOWED RESEARCH CHAIRS

Unisa is proudly African and its research and innovation agenda is informed by the needs and aspirations of the African content, yet also explores brave new frontiers in a number of key disciplines. This societal imperative is served by a number of chairs and institutes. In addition to the chairs established through Unisa investment, the university co-hosts a number of leading endowed research chairs.

UNESCO-Unisa Africa Chair in Nanoscience and Nanotechnology

Prof. Malik Maaza

As many as 25 sub-Saharan African countries are in the throes of an energy crisis and less than a quarter of the region's population has access to electricity, according to the World Bank. These bleak statistics underline the urgent need for solutions of the kind that the United Nations Educational, Scientific and Cultural Organization – University of South Africa (UNESCO-Unisa) Africa Chair in Nanoscience and Nanotechnology is investigating.

The chair's research involves using nanotechnologies to explore feasible solar energy and water purification methods, often in collaboration with partners across the continent and further afield.

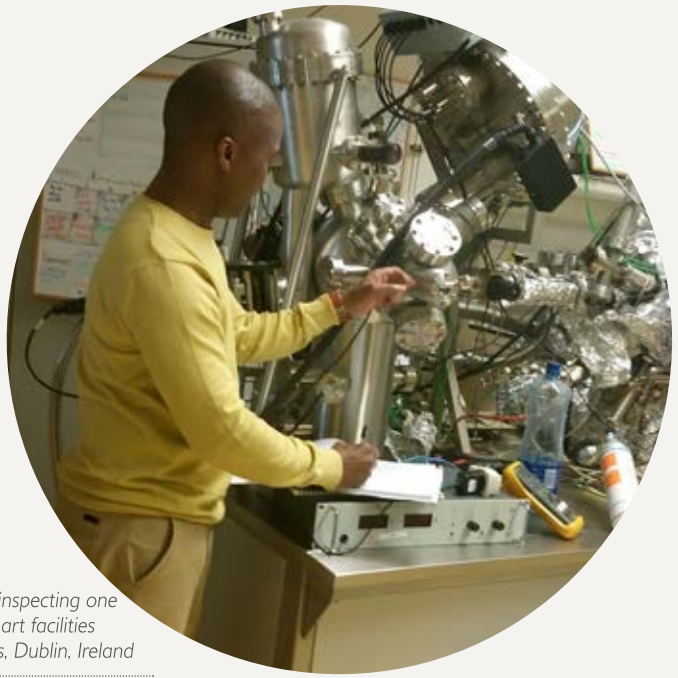
A major collaboration that took place in 2016 was that with Ireland's leading nanosciences institute, the Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN) at Trinity College, Dublin.

It was initiated by Force Tefo Thema, a Nanoscience and Nanotechnology PhD student, who visited CRANN in Ireland hoping to attain a memorandum of agreement. The purpose of his visit from 28 August to 11 September 2016 was to enter into a scientific collaboration that will help deliver effective solutions for developing countries such as South Africa and Botswana.

Thema, who also visited the School of Business at the University of Leeds in the United Kingdom, said although the collaboration with CRANN was still in its infancy, the aim was to cultivate a long-term scientific association.

Professor Malik Maaza, incumbent of the UNESCO-Unisa Africa Chair in Nanoscience and Nanotechnology, agreed. "It is important that this envisaged baby should be born with delicacy and be nurtured in order to result in a fruitful long-term result," he said.

"It is indeed critical that we exploit some avenues for funding this visionary long-term research collaboration between Africa and Ireland," said Dr Colm Faulkner, Business Development Executive of CRANN.



Force Tefo Thema inspecting one of the state-of-the-art facilities at the CRANN labs, Dublin, Ireland

DST/NRF SARChI Chair in Social Policy

Land reform has strong transformative potential. This was the conclusion drawn from research that the Department of Science and Technology (DST) / National Research Foundation (NRF) South African Research Chairs Initiative (SARChI) Chair in Social Policy conducted on Zimbabwe's Fast Track Land Reform Programme (FTLRP) in 2016.

The DST/NRF SARChI Chair in Social Policy, which is hosted at Unisa's College of Graduate Studies, explores the transformative aspects of social policy, which seeks to enhance human wellbeing and prevent vulnerability by transforming the economy and society.

Land reform has the potential to be an important social policy tool for transformation. The 2016 research project on land reform in Zimbabwe was intended as a corrective to two bodies of scholarship. First is the lack of attention to land and agrarian reform as a policy instrument for enhancing human well-being within the Organisation for Economic Co-operation and Development (OECD) -centric social policy literature. Second is the absence of an appreciation of land and agrarian reform as a social policy instrument in the land reform literature. The study was concerned with identifying a wider body of policy instruments for enhancing human well-being in the African condition.

Two key questions examined

The Zimbabwean land reform research, carried out in partnership with the Sam Moyo African Institute for Agrarian Studies (SMAIAS) in Zimbabwe, looked at two key questions. The first was, "To what extent has the FTLRP achieved social policy outcomes focusing on the redistribution, production, protection, and social reproduction functions in the transformative social policy conceptual framework?"

The other question was, "To what extent did the FTLRP achieve the imperative of social and economic policies working in tandem, which is a critical aspect of the Transformative Social Policy (TSP) framework?"

Chair incumbent Prof. Jimi Adesina

Zimbabwe's FTLRP was formally announced in 2000 and ran until February 2016. During that 16-year period, over 300 000 families were resettled on 14.5 million hectares of land. The manner of redistribution and resettlement of land has sparked considerable debate about the process, impact and interpretation of the outcomes. Solid research could provide real evidence of the success or otherwise of the FTLRP.

Results showed benefits for small-scale farmers

The study confirmed that resettled small-scale farmers are engaged in various agricultural activities which have greatly transformed their lives, from growing crops ranging from maize and tobacco. Beyond production, access to land is solving the destitution problem. Land reform beneficiaries achieved food sovereignty and did not need much social assistance compared to their counterparts in the communal areas.

In one of the sites, women beneficiaries outperform male beneficiaries in production and asset accumulation.

Extensive non-farming activities have emerged in the new resettlement areas. Nonetheless, the benefits of land reform have been undermined by three factors: poor economic performance, weak agrarian support for land beneficiaries, and weak social services. The study confirmed two elements of the TSP framework: a focus on social policy design as an 'architecture' rather than single instruments, and the imperative of economic and social policies working in tandem.

The results were presented at a series of seminars that the chair held in 2016 as part of the flagship studies of master's and doctoral students and postdoctoral research fellows. The theme was 'Social Policy Dimensions of Land and Agrarian Reform'.

The findings were also disseminated through local and international conferences, research publications to the intellectual community, and policy briefs to the policy community and social movements.

Professor Jimi Adesina, head of the Chair in Social Policy, said that while land reform may not be on the agenda for many African countries, heightened agrarian policy and protection is.

"Agrarian reform can serve the function of increasing the productive capacity of farming opportunities, improve welfare and perform as a significant social policy instrument available to policy makers in Africa and globally".

DST/NRF SARChI Chair in Development Education

Chair incumbent Prof. Catherine Odora Hoppers

Established in 2007 as a national chair, the Department of Science and Technology (DST)/ National Research Foundation (NRF) South African Research Chairs Initiative (SARCHi) Chair in Development Education introduces a new pedagogy in academic research and citizenship education that makes human development its goal.

Development education reframes human development and systems transformation within a paradigm of restorative action and cognitive justice. Through research, postgraduate teaching and community engagement, the chair seeks answers to some of the most taxing and exciting questions about development, knowledge production and science.

Such questions include the kind of transformative actions that must be brought to bear to enable both restorative action and sustainable human development to occur in Africa and elsewhere. Similarly, the chair explores how key areas of disciplinary knowledge production (such as science, economics, education and law) can be reconstituted to bring about just and human-centred development on the continent.

The chair works closely with the leadership of South African and other African universities, as well as with selected institutions and individuals in the North, on methodologies in the transformation of research paradigms and curricula, leadership building and systems transformation.

The PASCAL International Observatory of the Organisation for Economic Cooperation and Development, has endorsed the chair as its global South Centre on Universities and Learning Regions. Areas covered include lifelong learning, resilient and adaptable communities, management of public sector reforms and the balance between economic, social, environmental and cultural development.

The Chair in Development Education has established a "circle of elders" known as the International Indigenous Knowledge Advisory Faculty, comprising indigenous knowledge custodians and practitioners. This is part of the chair's vision of bringing the core of African values, traditions and knowledges to the awareness of university staff and students. Professor Catherine Odora Hoppers is the chair's incumbent.

Through research, postgraduate teaching and community engagement, the chair seeks answers to some of the most taxing and exciting questions about development, knowledge production and science.

DST/NRF SARChI Chair in Law, Society and Technology

Chair incumbent Prof. Tana Pistorius

The Department of Science and Technology (DST)/ National Research Foundation (NRF) South African Research Chairs Initiative (SARCHi) Chair in Law, Society and Technology's research focus is aligned with knowledge generation and human capital development in response to the needs of the African continent (e-commerce legal frameworks for Africa). It also contributes to economic sustainability, innovation and capacity building in science and technology (the role of intellectual property [IP] in the knowledge economy) and open distance learning (the management of IP for open learning).

The chair promotes responsible virtual citizenship (legal aspects of cybersecurity, IP and cybercrime) and focuses on intellectual property law and innovation, especially the role that design law can play in the innovation chain. The chair's incumbent is Professor Tana Pistorius.

DST/NRF SARChI Chair in ICT for Development

Chair incumbent Prof. Judy van Biljon

Information and Communication Technology (ICT) is a powerful tool for resolving developing world challenges towards improving the human condition in a sustainable way. The Department of Science and Technology (DST)/ National Research Foundation (NRF) South African Research Chairs Initiative (SARChI) Chair in ICT for Development (ICT4D) seeks to use ICTs to address developmental constraints, whether financial, infrastructural (such as a lack of internet access) or skills related (as in a lack of ICT and computational skills).

Located within the School of Computer Science, the chair has an initial lifespan of five years, from January 2016 to December 2020. Its focus is on activating, managing and monitoring research projects involving postgraduate students, who have access to a well-equipped Human-Computer Interaction Laboratory, as well as on developing productive and constructive collaborations.

The chair already collaborates with the Meraka Institute at the Council for Scientific and Industrial Research (CSIR), Monash University in Australia, Glasgow University in Scotland and Koblenz-Landau University in Germany. The 2016 focus was on collaboration with African countries where talks were conducted with the University of Nairobi and the Namibia University of Science and Technology. Given the developmental focus of ICT4D, the chair intends extending its collaborations in Africa and with other developing countries, especially Brazil and India.

One of the developmental challenges the chair is addressing is the sustainable application of mobile technology for enhancing teaching and learning. The emphasis is on the digital skills of teachers and students, infrastructure and appropriate devices, and policies for the provision and use of mobile devices in teaching and learning.

Other projects are under way to design, develop and test mobile apps for addressing issues of low bandwidth, unreliable internet access and other resource constraints. This work emphasises the user experience, which includes the accessibility and usability of devices. The Human-Computer Interaction Laboratory in the School of Computing provides facilities to support the user experience research towards promoting knowledge sharing in the African context. The incumbent of the chair is Professor Judy van Biljon.

Research chairs and institutes

Exxaro Chair in Business and Climate Change

Chair incumbent Prof. Godwell Nhamo

The Exxaro Chair in Business and Climate Change (Chair) was established in 2008 with a life span of three years. Following the chair's success, Exxaro Resources (Ltd), through its Chairman's Fund, renewed the Chair's mandate for a further five years to 2015. The chair's life has now been extended to 2018.

The vision of the chair is 'To create a centre of excellence in business and climate change research, education and advocacy oriented community engagement'. Its mission is 'To support South African and African stakeholders (including business, government and civil society) in their quest to reduce greenhouse gas emissions and adapt to climate change through relevant and cutting edge research, education and advocacy oriented community engagement programmes'.

The chair is mandated to operate in three thematic areas namely, research, academic programme development (including training and capacity building), and advocacy-oriented community engagement.

In terms of governance, the chair resides in the Institute of Corporate Citizenship (ICC) hosted by the College of Economic and Management Sciences under the auspices of the Executive Dean. While the chair's autonomy is safeguarded, he or she is guided by an Advisory Board with nominated representatives from Exxaro, the business sector, civil society, government, and representatives from Unisa. The Advisory Board meets at least twice a year and advises the chair on issues of relevance and direction with regard to the chair's mandate. Professor Godwell Nhamo is the chair's incumbent.

WIPHOLD-Brigalia Bam Research Chair in Electoral Democracy in Africa

Chair incumbent
Prof. Kealeboga J Maphunye

The purpose of the Women Investment Portfolio Holdings (WIPHOLD) Brigalia Bam Chair in Electoral Democracy in Africa is to promote and advance electoral studies in research, tuition and training, as well as to contribute towards the overall establishment of a democratic culture in South Africa and on the continent. The chair, situated in the Department of Political Sciences, is the first academic chair of its kind in South Africa and on the continent.

Since its establishment in 2012, the chair has been working hard to promote the tenets of democracy through the training of electoral officials and capacity building, election observation, well as conducting research on topical election-related issues. Furthermore, much of the work of the chair is conducted through collaboration with a range of relevant election-related stakeholders. Among others, these include academic bodies, civil society organisations, election management bodies (EMBs), Southern African Development Community Electoral Commissions Forum (SADC-ECF), Electoral Institute for Sustainable Democracy in Africa (EISA), African Union (AU), International Institute for Democracy and Electoral Assistance (IDEA), and United Nations Development Programme (UNDP).

The importance of the chair for the continent is critical, as it seeks to serve as a conduit through which the university can reach all relevant stakeholders and role-players in the areas of elections and democracy. The chair also plays a role in ensuring that elections in Africa remain a topical issue of African public discourse so as to improve the management of elections in Africa and to promote electoral democracy through community engagement, research, publications, tuition and supervision, and capacity building for electoral officials. The chair also hosts regular events such as the Interest Group in Elections seminar series and the Annual Colloquium in Electoral Democracy.

UNISA RESEARCH CHAIRS

Initially, Unisa's research chair programme was intended to run until December 2015. Such was the value derived from the five university-funded chairs that the programme has been extended for a further three years, from 2016 to 2018.

The five chairs are:

- Ecotoxicology
- High-Performance Computing
- Macroeconomic Policy Analysis
- Superconductivity Energy Technology
- Topology

For 2016, these chairs collectively contributed 49 articles in accredited journals, 14 peer-reviewed conference proceedings, and nine master's and doctoral graduates, among other research outputs.

Chair incumbent Prof. Jack Mphahlele

Research Chair in Ecotoxicology and Environmental Sustainability

The treatment of diseases such as malaria, tuberculosis, HIV/AIDS and Ebola is a challenge for Africa considering the lack of interest in such research on the part of many major pharmaceutical companies and the weakening of existing drugs owing to the spread of drug-resistant microbes. The Unisa Research Chair in Ecotoxicology and Environmental Sustainability, with incumbent Professor Jack Mphahlele, strives to help fill some of the gaps in the supply of affordable, effective compounds for treating various diseases. In essence, the chair designs and synthesises analogues of medicinally important compounds, the aim being to prepare derivatives that are more potent, affordable and have reduced side effects. Currently, the main focus of the chair is on the synthesis of compounds with potential antimicrobial, antimycobacterial and anticancer properties. The superbly equipped chemistry laboratories at Unisa's Science Campus are the setting for this work.

Chair incumbent Prof. Mauritz Braun

Research Chair in High-Performance Scientific Computing

The advent of Big Data has made it imperative for South Africa and Africa to build capacity in high-performance scientific computing (HPSC) and produce highly qualified professionals in the field. The chair, under incumbent Professor Moritz Braun, trains master's and doctoral students in high performance computing and conducts research on two main topics in the domain of computational physics. One topic is the calculation of the properties of atoms, molecules and solids using the method of finite elements in three dimensions. The second topic is the simulation of seismic processes making use of parallel processing to estimate parameters describing the structure of the substrate or the seafloor. In addition, part of the chair's focus includes research into algorithm and application optimisation, which may be used across colleges and departments in the application of HPSC techniques.

Research chairs and institutes

Research Chair in Macroeconomic Policy Analysis

Chair incumbent Prof. Nicholas Odhiambo

While civil war and political instability have taken their toll on the economies of some sub-Saharan African countries in post-colonial times, so have misaligned or inappropriate macroeconomic policies. The main purpose of the Research Chair in Macroeconomic Policy Analysis, under incumbent Professor Nicholas Odhiambo, is to evaluate some of the monetary and fiscal policies that have a bearing on economic growth, unemployment, and poverty in African countries, and to use the findings to provide tailor-made policy advice to individual countries on a case-by-case basis. The chair has a reputation for producing high volumes of high-quality research, year on year, with its 2016 tally including 22 articles in accredited journals. One of its most successful contributions is its Unisa Economic Research Working Paper Series (consisting of its work in progress), which is currently indexed by RePEc/IDEAS (hosted by the Research Division of the Federal Reserve Bank of St. Louis, USA), and is also available on Google Scholar. Topics from 2016 include, amongst others, financial sector reforms and private investment in Malawi, macroeconomic drivers of economic growth in South Africa and Malawi, financial development and economic growth in Ethiopia, public-private investment nexus in South Africa, coal consumption and economic growth in South Africa, and trade policy dynamics in Botswana.

Research Chair in Superconductivity Energy Technology

Chair incumbent
Prof. Srinivasu Vallabhapurapu

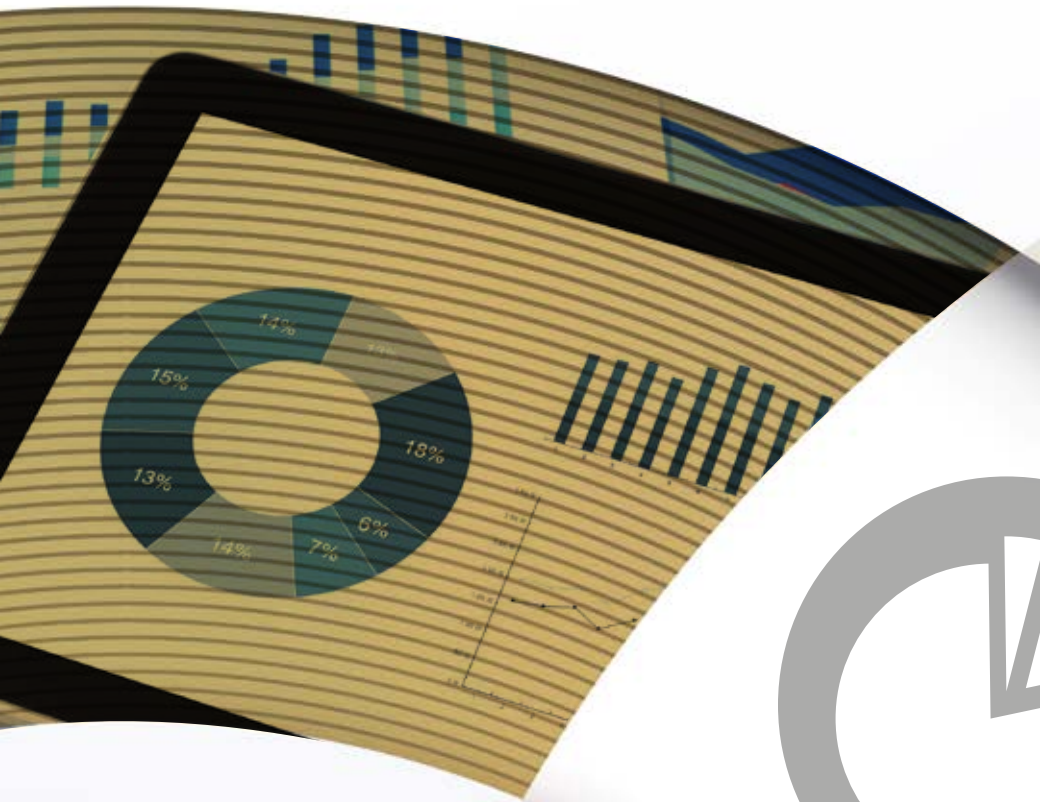
Superconductivity science and technology research has become an important focus area globally given the importance attached to energy storage and energy saving technologies. The chair, which is one of a kind in South Africa, is a research platform for the development of superconductivity energy-saving technologies and assists in developing skills and building capacity in superconductivity. The incumbent of the chair is Professor Srinivasu Vallabhapurapu. Its aim is to prepare the country to embrace superconductivity technology when it reaches energy markets by 2020. The chair has extensive research collaborations, including with University of Tokyo, Japan, the Chinese Academy of Sciences, China, the Indian Institute of Technologies and the University of Madras, India. It has also succeeded in securing internal and external funding to purchase sophisticated equipment such as an AFM-MFM-STM multimode system.

Research Chair in Topology

Chair incumbent Prof. Themba Dube

In helping to deepen humanity's understanding of the world around, topology can be an invaluable discipline as it describes mathematical spaces and their properties. Thus, topology can be a useful guide in studying areas such as biology, cosmology, computer science, robotics and theoretical physics. Under incumbent Professor Themba Dube the Research Chair in Topology has a strong publications record, annually producing an average of nine publications in accredited journals. Whereas earlier publications mainly explored the traditional aspects of pointfree technology, more recent publications have algebraic and categorical leanings, increasing the readership of the chair's publications and opening up more possibilities for international collaboration. Research areas of interest are pointfree technology, algebraic frames, commutative f-rings and rings of continuous functions.

Research niche areas



INTRODUCTION

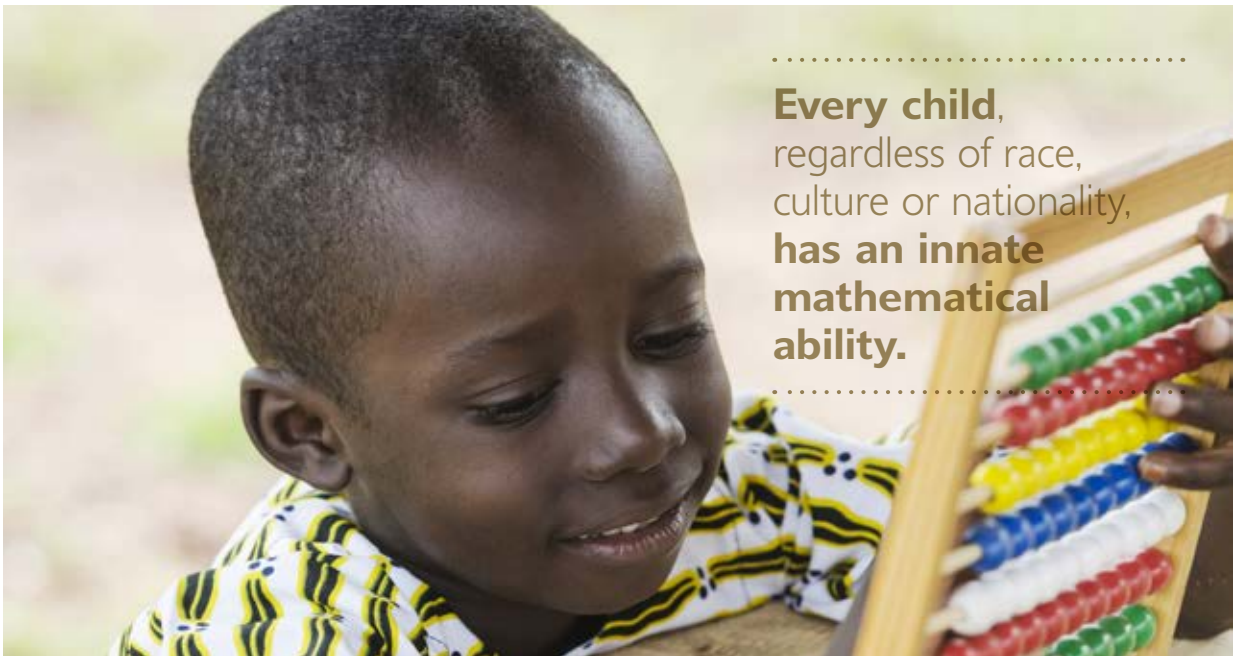
Rather than pigeonhole research projects into specific disciplines, Unisa organises its research efforts into niche areas or cross-cutting themes that focus on the challenges facing South Africa and the rest of the continent, and lend themselves to transdisciplinary and multidisciplinary research.

There are five broad niche areas, namely

- knowledge generation, dissemination, application and human capital development in response to the current and future societal and stakeholder needs of South Africa and the African continent
- the promotion of democracy, human rights and responsible citizenship
- innovation and capacity building in science and technology
- economic and environmental sustainability
- knowledge generation and the application of best practices in open, distance and e-learning (ODeL).

A number of highlights related to these niche areas are presented below.

Research niche area 1: Knowledge generation and human capital development in response to the needs of South Africa



Finding ways to strengthen children's innate mathematical abilities

Every child, regardless of race, culture or nationality, has an innate mathematical ability. Six-month-old babies already have some concept of numbers and skills such as "subitising" (the ability to look at a small number of items and immediately judge how many there are). Innate numerical and spatial reasoning abilities have also been demonstrated in toddlers.

"The first 100 days of a child's life are especially important in their development – those are the 'smart' days," says Professor Nosisi Feza, Head of the Institute for Science and Technology Education (ISTE) at Unisa. "As a child grows older, however, it is important to nurture and develop these universal, innate abilities so that children are able to perform well in school-level mathematics."

When children do not have an opportunity to extend and expand their innate knowledge, however, this ability can stagnate. "We see this often in young girls in South Africa. Young girls are very good at maths but when they reach puberty, they sometimes lose that because they start paying more attention to others, especially boys. Boys, on the other hand, are still boys at the age of 13 or 14, so they do not experience the same pattern."

As a science and technology education researcher, Feza's passion is exploring ways to strengthen the innate mathematical abilities of children – especially pre-school and Grade R African children, as many do not receive sufficient mathematics stimulation due to overcrowded schools and poorly qualified early childhood development (ECD) practitioners and educators. Her work has brought her international recognition, including a 2016 Distinguished Scientist Award in Mathematics Education from the Centre for Advanced Research and Design at the Venus International Foundation in India.

Filling Grade R teachers' training gaps

For the past three years, Feza has been concentrating on a Grade R community project in Queenstown, in the Eastern Cape, working with a group of 16 Grade R educators who are former daycare teachers. "They had no teacher training," says Feza. "This is a big problem in South Africa. If educators are not trained to teach mathematics to children, gaps can emerge in a learner's knowledge."

For instance, one of the **building blocks of mathematical performance** is the **ability to count sequentially**, she says. "If that doesn't happen, you will have children who can count but not in sequence; they will then not be able to move forward."

Hence, Feza formulated a number development module and spent a year training the Grade R teaching group in numerical concepts. Once they had a solid understanding of numbers and the teaching thereof, she introduced them to various classroom scenarios and resources.

Her group's knowledge and confidence has grown to the point where they are ready to share their classroom practices with the world, through video footage shown at events such as the annual conference of the Association for Mathematics Education of South Africa (AMESA).
Although pleased with this progress, Feza is concerned about certain language and policy obstacles impeding the development of mathematical skills in many African children.

Much more work remains to be done

In her research, for example, she found that more and more Xhosa-speaking parents are using English at home, and that children are often able to count above 100 in English, "but not a single child in the group I studied could count beyond 10 in Xhosa".

This is a real concern, as Grade R children are taught in their mother tongue and might experience difficulties as a result of a misalignment between what they learn at home or in their communities, and what is taught at school.

Another concern is that the mathematics curriculum may not always be in step with children's knowledge. By way of example, Grade R children must spend four weeks learning to subitise six items. "They already know how to do this, but they still have to be taught for four weeks because it is a requirement," Feza says. Her concern is that teaching children what they already know could result in some losing interest in mathematics at a critical stage of their development.

Still, where there's a will there's a way – and Feza is determined to help find answers to the dilemmas confronting mathematics education in South Africa.

Taking an early lead in tackling decolonisation

Decolonisation tops the agenda in discussions ranging from education to land reform. Various questions are being raised in this regard, and Unisa's researchers are at the forefront of a drive to help find the answers.

Professor Sabelo Ndlovu-Gatsheni, Director of Scholarship at Unisa's Change Management Unit, was one of the founders of the Africa Decolonial Research Network (ADERN) which, since 2011, has made important contributions to debates centering on decolonisation and decoloniality.

Early awareness of the coloniality challenge

The formation of ADERN predated the #RhodesMustFall and #FeesMustFall movements, showing that this network of academics was pre-emptive in identifying coloniality as a challenge. "We were prophetic because when we started, a lot of people did not understand why we were concerned about decolonisation and decoloniality, thinking this was something of the past, questioning why we were bringing it back," says Ndlovu-Gatsheni.

Being an academic means using knowledge and science to predict the future, he argues, and therefore professors need to profess knowledge which can offer guidance in terms of what is to come.

In 2016, Ndlovu-Gatsheni published two books: *The Decolonial Mandela*, subtitled *Peace, Justice and the Politics of Life*, and a volume co-edited with Professor Siphamandla Zondi, titled *Decolonising the University, Knowledge Systems and Disciplines in Africa*.

The dominance of Euro-American-centricity has prompted students to ask questions, such as: Where are the African academics? Why are there so few of them in South Africa? Ndlovu-Gatsheni adds that students raise questions about "cultural imperialism", since the institutional cultures of universities are still Eurocentric.

Ndlovu-Gatsheni, who supervises master's and doctoral students using decolonial theory to interrogate African issues, has visited the university's various colleges and departments to assist stakeholders with related curriculum amendments. As for remedying past injustices, Ndlovu-Gatsheni says Europe needs to de-imperialise, deracialise and decolonise, to create a new humanism where all people are equal.

Research niche area 2: The promotion of democracy, human rights and responsible citizenship

Stand up and protect people with albinism

South Africans must act to protect the human rights and ensure the safety of people living with albinism, says Unisa researcher Dr Maureen Mswela.

"People with albinism live in a high state of insecurity," explains Mswela, a senior lecturer in the College of Law, and one of a handful of researchers in this country to have investigated legal issues relating to persons living with albinism.

Violent crime targeting South Africans with the condition has not reached the levels seen in Burundi, the Democratic Republic of Congo and Tanzania, yet Mswela has noted an increase in related violent crime due to the belief that albino body parts have extraordinary powers. Such unfounded beliefs and superstitions clearly illustrate ignorance of what albinism is: a medical condition, an extremely rare group of diseases and a pigmentational variance in the skin, hair and/or eyes, owing to hereditarily blocked melanin synthesis.

Government and the public should act

"If the lives of persons with albinism are to have substantive meaning, the government must provide a safe and secure environment for this vulnerable group of people," she says, calling on the Minister of Safety and Security to appoint a task team to formulate a strategy aimed at safeguarding people with albinism. As a complementary strategy, the public need to be involved in identifying and implementing community-oriented safety measures.

We are all part of the human family

Mswela explains that albinos tend to internalise the harmful reactions generated by ignorance, cultural beliefs and myths, which leads to feelings of shame, and their subsequent self-imposed withdrawal and isolation from society.

People with albinism have many human rights concerns, according to Mswela, who completed her doctorate on selected legal issues relating to persons living with albinism, and has continued her research as part of the College of Law's flagship community engagement project on Biotechnology and Medical Law.

Mswela has initiated an albinism awareness campaign, as she believes educational programmes can help to eradicate superstitious beliefs, discrimination and stigma. "The successful transformation of minds rests on the acknowledgement that persons living with albinism are part of the human family."

People with albinism live in a high state of insecurity."

Ancient San wisdom could help bring peace to modern-day Africa

Members of the community and field researchers of the Platfontein San Community Site of Knowledge for Dispute Resolution project

Ancient San wisdom could hold the key to bringing peace to conflict-riddled societies, a dispute-resolution project among the San of Platfontein, near Kimberley in the Northern Cape, has revealed. Dr Andreas Velthuizen, senior researcher at Unisa's Institute for Dispute Resolution in Africa (IDRA), notes that the San have survived years of pressure from other cultures, the Cold War's violent rivalry in Africa and decades under apartheid. "The San – especially the elders – have 'lived experience' that you won't find in any book," he notes.

Before embarking on the project in 2013, Velthuizen and Professor John Faris, head of IDRA, researched post-conflict dispute resolution in some of Africa's most strife-torn countries. This helped shape IDRA's "Harmony Model" of dispute resolution – an African problem-solving model.

"In Rwanda, we encountered the Gacaca court system, meaning 'justice on the grass', a form of community-based justice for 'category-three genocidaires (perpetrators)'," According to Velthuizen, this involved allowing people who had committed lesser crimes during the genocide to publicly confess and ask for forgiveness.

Partnership in Platfontein

IDRA formed a partnership with the 7 000-strong San community in Platfontein, which was experiencing high levels of intra-community strife fuelled by the stresses of modern living, high unemployment and a struggle for basic services.

Post-traumatic stress was also prevalent, as people from the community had experienced many horrors during the apartheid government's war with South Africa's neighbouring countries. Their knowledge of age-old dispute-resolution techniques was still there, but it had to be put back into practice.

Identifying obstacles to peace

The project saw the community identifying ten young people who had completed a matric and could speak English, Afrikaans and the local San languages, !Xun and Khwe. After receiving fieldworker training they interviewed 200 residents, to gather data on conflicts within the community. San elders interpreted the data by building a conflict map, a paper baobab tree with many roots and branches, showing the complexities of conflict in the community. The San living outside Platfontein were also invited to air their views, thus providing a broader perspective.

The result was a hybrid dispute-resolution model which blends modern and traditional San peace-making methods based on dialogue, consensus, patience and common sense.

An impact assessment among 200 members of the community showed that 90 per cent had a better understanding of, and attitude towards, resolving disputes at community level.

Now the challenge is to spread this wisdom to conflicted communities across and beyond Africa.

Research niche area 3: Innovation and capacity building in science and technology

Unisa invention could reduce synthetic fuel production costs

While the world's fuel supplies are still dominated by crude oil, synthetic fuel production is gaining ground. This could accelerate if constraints such as production costs were effectively dealt with. Chemical engineers from Unisa's Materials and Process Synthesis (MaPS) unit are playing their part in achieving this aim.

Hot on the heels of their earlier successes in Australia, China and the United States, these researchers are patenting an invention that has the potential to improve process performance and reduce the cost of synthetic fuel production. A major cost factor in production is the catalysts used inside the chemical reactors that convert synthetic gas (a mixture of hydrogen and carbon monoxide) to synthetic fuels.

These catalysts can easily be damaged or destroyed when overheating occurs inside the reactor during the conversion process. When that happens, the reactor has to be shut down while the catalyst is replaced, halting operations and pushing up equipment and operating costs.

Eliminating hotspots

Enter the Unisa invention being patented as the "Tubular fixed-bed reactor with heat pipe for internal heat removal for Fischer-Tropsch synthesis".

"The **invention** seeks to **eliminate hotspots in the reactor**, reducing the catalyst cost and **increasing the overall production** rate," says Dr Xiaojun Lu, senior researcher in Fischer-Tropsch Synthesis at MaPS.

If implemented in a major synthetic fuels project, it could save the manufacturer between 20 and 30 per cent of the reactor and catalyst costs respectively, while retaining the same production capacity, he notes. "The life of the catalyst could be extended and the overall plant would have a longer time online."

The invention is being patented both locally and internationally. A Patent Cooperation Treaty application was filed in 2015, and the process is due to enter the national phase in 2017.

The tubular fixed-bed reactor with heat pipe for internal heat removal for Fischer-Tropsch synthesis, ready to be installed

Taking a "waste not, want not" approach to brewing beer

Beer drinkers would be taken aback to know just how much of the golden brew is wasted during brewing, not to speak of the quantities of water, energy, barley and hops which are lost in the process.

For every 1 000 ml of spent yeast removed after fermentation, up to 400 ml of beer is wasted, says master brewer and Unisa doctoral student, Craig Groeneveld.

The wastage is even worse when water is factored in: "Beer production is water intensive, with an ambitious target of 3.5 litres of water required to produce one litre of beer," he notes.

Groeneveld adds that 40 per cent of yeast slurry contains waste beer, but if the beer were separated from the spent yeast and added back to the wort (the liquid extracted from the mashing process), these losses could be reduced.

How to separate the beer from the yeast and use the recovered beer in the brewing process constitutes a full chapter of Groeneveld's research study.

Ultraviolet technology

His solution uses filtration technology to separate the beer from the yeast, sterilising it with ultraviolet light and adding small quantities of beer back into the main brew prior to fermentation.

Safe and effective, ultraviolet light processing has a lower capital cost, lower energy requirements and is a greener technology. It is believed to be the first time UVC light has been used for beer production, and Unisa has filed a provisional patent.

Groeneveld has received seed funding from the Technology Innovation Agency (TIA) to help develop his innovation.

All the preparatory work has been done, leaving Groeneveld free to do what he does best: using the microbrewery at Unisa's Science Campus in Johannesburg to brew his own beer, adding recovered beer to it, having samples scientifically tested and, of course, putting his beer to the taste test.

"The proof of the pudding is in the eating, so I'd like to present Unisa with beer made in this new way," he explains.

> "Once we've proven that we can make great beer with this process, we will look to commercialise it with brewing companies."

Research niche area 4: Economic and environmental sustainability

Light at the end of the tunnel for energy-poor communities

"Dirty" fuels such as paraffin and kerosene are often to blame for the high rate of burn deaths in South Africa, and for the illnesses and premature deaths which can be linked to indoor pollution, especially in informal settlements. Researchers from Unisa and the South African Medical Research Council (MRC) are collaborating to find clean, safe and affordable solutions to these problems.

This team effort has seen the construction of live demonstration facilities at Unisa's Institute for Social and Health Sciences in the south of Johannesburg, where community members can experience for themselves the power of three clean energy solutions for households: solar, biogas and cool coatings.

Clean energy options such as these are already available in the market, but further research is needed to identify what works and what does not. "Different communities have diverse needs and so could benefit from different technologies. This is why we have two biomass technologies: a gasifier using plastic and paper waste, and a biodigester that consumes cow dung from farming," says Ralph Muvhiiwa of Unisa's MaPS unit.

The gasifier, which converts plastic and paper waste into syngas, is probably better suited to the needs of people living in informal settlements, while the cow-dung-fuelled biodigester would be ideal for use in farming communities.

Since energy costs are a major constraint for low-income communities, the team is investigating costs and financial models in which the main costs would go towards buying equipment and associated appliances. The fuels that feed them (sun, paper and plastic, or cow dung) are virtually free, thus maintenance costs will be negligible.

It appears that there is light at the end of the tunnel for energy-poor communities.

Community members can experience for themselves the power of three clean energy solutions for households: solar, biogas and cool coatings.

More power to the electric car market

Electric cars are the future, with a surge in demand in countries like China turbocharging this market. However, suitable batteries to power these vehicles are needed if they are to come close to overtaking fossil-fuelled cars.

High-performance, cheaper and cleaner lithium batteries suitable for electric cars are under development in a joint project headed by Unisa's Chemical Engineering Dr Liu Xinying, and Professor Yuan Zhongyong of Nankai University in China.

Despite being used in cell phones, laptops and electric cars, lithium batteries are still very expensive. "We are trying to reduce cost by using alternative battery materials," says Xinying, part of the Material and Process Synthesis Research Unit at Unisa's Science Campus in Johannesburg.

Existing lithium iron phosphate batteries are manufactured using ferrous iron – the most expensive iron source. "Instead, we are using ferric iron, which is cheaper and also has a higher valence."

The researchers are using phosphate and carbon from a feedstock such as sugar or graphite to reduce ferric iron to ferrous iron.

A cleaner, better battery

Xinying says the phosphorus source is also important; current manufacturing processes use inorganic phosphate, which can cause pollution and be highly corrosive. Instead, he and his research partner are working with an organic phosphonic acid compound which is cleaner and safer, and brings the phosphorus and carbon closer. This helps to create a better structure in the lithium iron phosphate, thus enhancing performance.

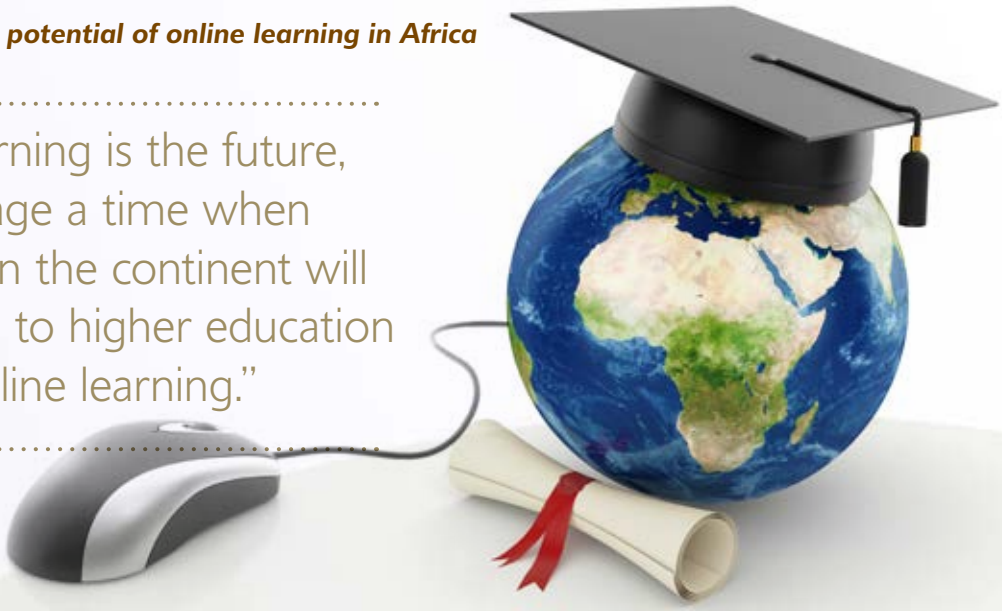
The Unisa–Nankai University invention, which is protected through a provisional South African patent, has been earmarked for seed funding from the Technology Innovation Agency. "By using cheaper and more environmentally friendly materials, we are working towards a cheaper, cleaner, better-quality solution," says Xinying.

"By using cheaper and more environmentally friendly materials, we are working towards a cheaper, cleaner, better-quality solution."

Research niche area 5: Open distance learning

Investigating the potential of online learning in Africa

"Online learning is the future, and I envisage a time when everyone on the continent will have access to higher education through online learning."



Could online education be the solution to higher education in Africa? Unisa geography researcher, Professor Ashley Gunter, with the backing of a R2 million grant from the National Research Foundation (NRF) and in partnership with the Open University of the United Kingdom, is exploring distance education as a pathway out of poverty.

"Online learning is the future, and I envisage a time when everyone on the continent will have access to higher education through online learning," says Gunter, Associate Professor in the College of Agriculture and Environmental Sciences. Many questions first need to be answered, such as how students behave online and how that can be used to enhance their prospects of success, particularly in STEM (science, technology, engineering and mathematics) subjects. Another significant question is why students in countries such as Nigeria, a regional education hub, and Zimbabwe, which has its own open university, choose to study through Unisa.

In all, 1 000 African students based in Nigeria, Zimbabwe, South Africa and Lesotho are taking part in the study.

R10 million investment

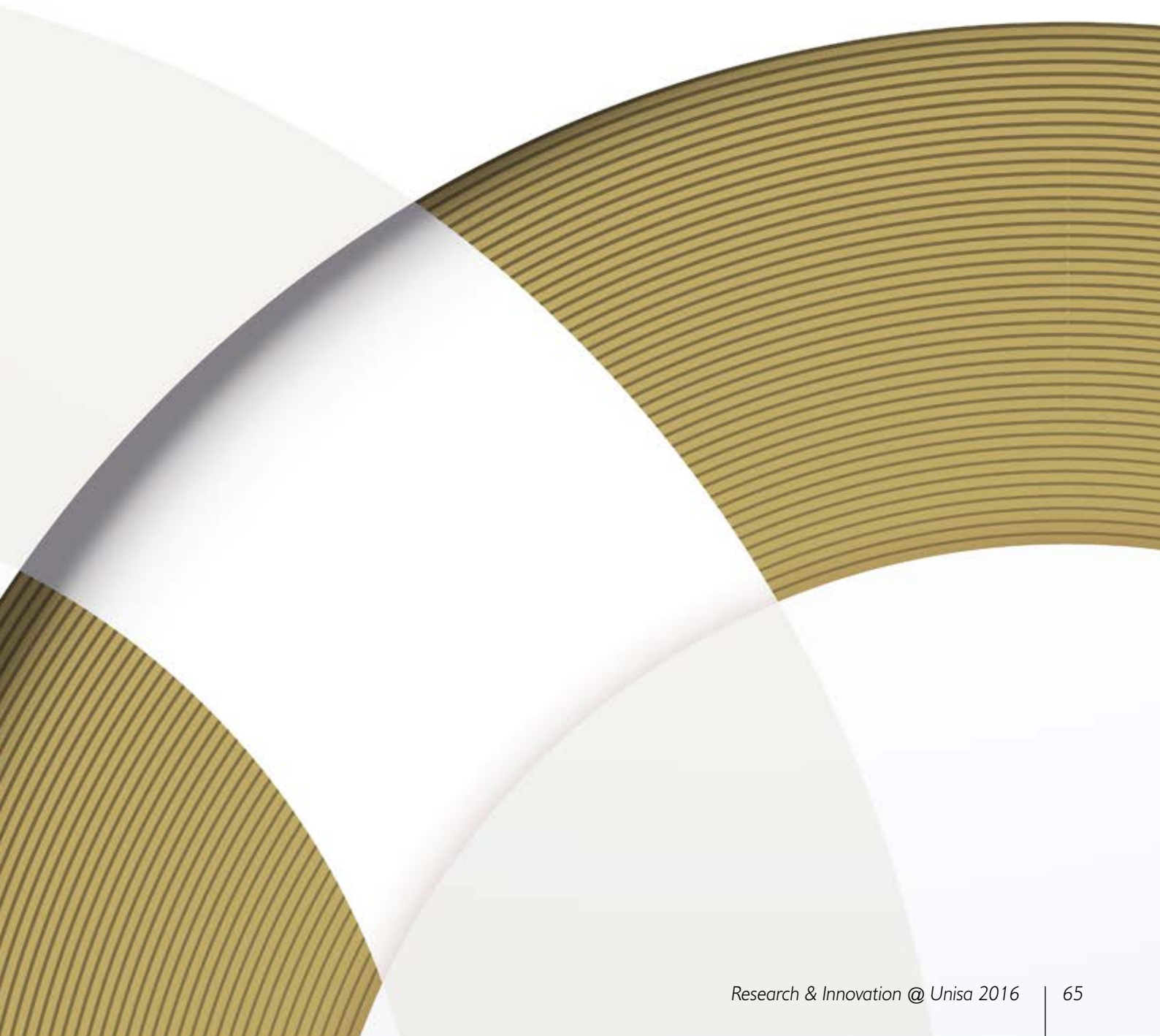
This 30-month study, which is due to run until 2019, is being undertaken in partnership with the Open University, which has obtained R8 million in additional funding, bringing the total investment to R10 million.

In phase one, the research team will study and analyse the online behaviour of participating students: How often do they go online? What do they download? Are they active in discussion forums?

Insights will be tested in phase two, starting with an online survey of the phase one students, followed by contact interviews in the countries where they are based. Questions will focus on the challenges students face, the benefits of studying at Unisa, whether subject knowledge is relevant, and whether knowledge should be globalised or localised.

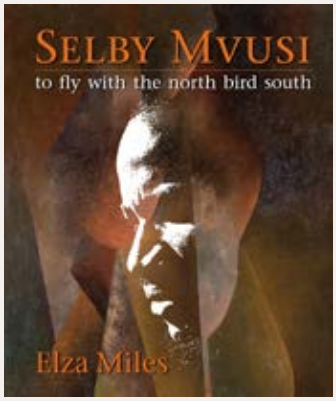
The team will spend 2018 introducing interventions to assist students who might be running into difficulties. Such interventions will take the form of automated emails to students who have been offline for extended periods, or alerting lecturers that a student is encountering challenges.

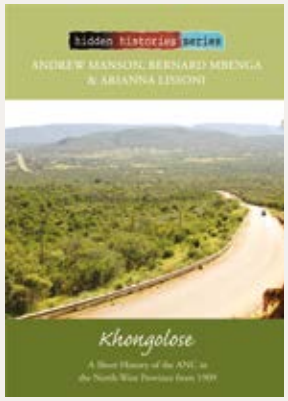
To cite Gunter: "We feel online is a great platform for giving people access to higher education, and the more we know about their online behaviour, the more we can do to help them succeed."



Enabling research

Unisa Press





This is an exciting time for a university press to push traditional boundaries. The scholarly publishing environment is evolving rapidly, particularly in the arena of digital and open access publishing, and university presses are under pressure to deliver their services cost-effectively and sustainably. Unisa Press has embraced the opportunities that the digital era presents while remaining true to its long-held goals of publishing and disseminating excellent research that focuses on the African continent.

Each year, Unisa Press strives to publish new academic and scholarly book titles, as well as to continually enhance its stable of accredited and non-accredited journals. The year 2016 was highly productive: eight new scholarly books were published, along with 43 journals.

The 43 journals include 23 co-published with Taylor and Francis, giving these publications wider reach and a higher profile. A total of 35 of the journals are nationally accredited, with 20 listed on Scopus, seven on ISI/Thomson Reuters, six on IBSS and three (all open-access journals) on ScieloSA.

The total article count for all 43 journals published in 2016 came to 847. The table below contains the full list of journals and their associated article count.

Table 1: Journals published in 2016 and their associated article count

Title	Number of articles published
Africa Education Review	37
Africa Journal of Nursing & Midwifery	27
African Historical Review	11
African Journal of Research in Mathematics, Science & Technology Education	28
African Journalism Studies	27
African Review of Economics & Finance	10
Africanus	6
Agenda – Empowering Women for Gender Equity	42
Agrekon	20
Commonwealth Youth and Development	25
Communicatio	29

Title	Number of articles published
Critical Arts – Journal of South North Cultural Studies	29
De Arte	12
Economic History of Developing Regions	7
Education as Change	34
English Academy Review	16
English Studies in Africa	15
Gender Questions	6
Imbizo	14
International Journal of African Renaissance Studies	18
International Journal of Educational Development in Africa	6
Journal for Semitics	42
Journal of Early Christian History	19
Journal of Law, Society and Development	8
Journal of Literary Studies/Tydskrif vir Literatuurwetenskap	34
Language Matters	20
Latin American Report	11
Mousaion	32
Muziki	18
New Voices in Psychology	10
Oral History Journal of Southern Africa	14
Philosophical Papers	18
Phronimon	12
Politea	9
Progressio	13
scrutiny2	18
Social Work Practioner-Researcher	25
South African Historical Journal	26
South African Review of Sociology	23
Southern African Journal for Folklore Studies	9
Studia Historiae Ecclesiasticae	36
Transactions of the Royal Society of Southern Africa	27
Tric Trac	4
Total	**847**

In terms of books, Unisa Press publishes independent scholarly and academic books and has expanded into the broader specialist books arena. In Africa and South Africa, Unisa Press books are accessible at academic bookshops, Sechaba Books and Verity Publishers. Internationally, ISBS is the Press's distributor in the United States and Canada, and European distributes in Europe. This network ensures that the books are visible and available in the major international markets.

Four of the books published in 2016 were commissioned works, and the other four were scholarly, peer-reviewed books that underwent the Senate Publications Committee's acceptance process. The tables below provide details of, respectively, the commissioned works that were published, and the scholarly books that were published.

Table 2: Commissioned titles published in 2016

Title	Author(s)
Chaka	Mofolo, T
Developing nutrition in developing countries	Steyn, N and Temple, NJ
Magnet theatre	Lewis, M and Krueger, A
Researching power and identity in African state formation	Doornbos, MR and Van Binsbergen, WMJ

Table 3: Scholarly (Senate Publications Committee) titles

Title	Author(s)
Khongolose: A short history of the ANC in the North-West Province from 1909	Manson, A, Bernard M and Lissoni, A
Nelson Rolihlahla Mandela : Reflection through the eyes of the poet	Mafela, MJ
The new African librarian	Thata, BM
White narratives	Manase, I

Each year, one Unisa Press book publication is selected for the prestigious Hiddingh-Currie Award, a literary award presented annually to encourage and nurture specialised skills in academic research and scholarly publication. The winner of the 2016 award was *Selby Mvusi - to fly with the north bird south* by Elza Miles.

Looking forward to 2017 and beyond, Unisa Press continues to strengthen its digital publishing skills, reaping the associated cost and efficiency benefits.

Unisa Library

For the 21st century student and researcher, the Unisa Library is an indispensable resource, not only providing access to knowledge and information but also helping to build research profiles and expanding the influence of research findings.

Preparing for open data access

The Unisa Library is at the forefront of the university's drive to embrace the digital and open data era in an orderly, systematic way. During 2016, the Library led the Research Data Management task team, formed in the previous year to ensure Unisa has the institutional capacity to manage its research data assets effectively, responsibly and sustainably.

Open data access has many advantages, such as making optimal use of data sets and avoiding unnecessary duplication of expensive research, while also encouraging better research and data validation through heightened public scrutiny. It also brings challenges, mainly in terms of ethical, quality and cost considerations. Ethically, for instance, it is critical in an open data access environment to protect the confidentiality and privacy of research participants and prevent wrongful disclosure. From a quality perspective, it is crucial to ensure that all open data is properly managed, curated, recorded, preserved and digitally stored.

The role of Unisa's Research Data Management task team is to assess the university's readiness for open access to data, consult the research community and formulate a Research Data Management strategy, implementation roadmap and policy. The task team is hard at work and, if all goes according to plan, should be ready to start sharing details of a proposed strategy and roadmap in the coming year.

Increased global visibility and expanded support

The Unisa Institutional Repository, which is based on open access principles, continued to play a key role in supporting research at Unisa. It hosted 18 541 items in 2016 and was ranked fourth in Africa by the Ranking Web of Repositories. The UnisaIR, as it is known, has helped to increase the global visibility of Unisa researchers and scholars, especially as publications archived in it can also be reflected in their Google Scholar and ORCID profiles, and can support the NRF rating process. The UnisaIR enjoyed 10.6 million full text views in 2016.

The launch of the Unisa Digital Archives, during 2016, was a major step in implementing the Library Digitisation strategy. The collections included, amongst others, the Hesse Collection of German Africana and the Documentation Centre for African Studies with sub-collections.

Another major research-related Library highlight of 2016 was the variety of research support services available at the Research Commons, a research space exclusively for master's and doctoral students and academic and research staff. In 2016, the Research Commons had approximately 50 networked computers, three of which were customised for disabled students, all offering access to an extensive range of electronic resources and research software.

Discipline-specific services provided at the Research Commons through the Personal Librarians included citation searching, literature search assistance, advice on research publications, online submission of manuscripts to accredited journals, assistance with the NRF rating process, and bibliographic management software support for the management and compilation of references. The value of the services and facilities of the Research Commons were confirmed by the number of clients served in 2016: 69 595 in total.

Regular workshops were presented to assist postgraduate students and staff to use the Research Commons optimally, and a "virtual" Research Commons was available to those researchers who could not visit the physical facility.

Meanwhile, the Unisa Library continued to add to its digital archive collection and to encourage African scholars to use the African Digital Library (ADL). This is a collection of electronic books (eBooks) that can be accessed and used free of charge by any person living on the African continent. All that is needed to access the ADL is a device connected to the internet. Another valuable free service available throughout 2016 was PressReader, an app that provides access to over 4 000 digital newspapers and magazines. The Unisa Library subscribes to PressReader and makes it available free of charge to Unisa students and staff connected to the Unisa WiFi service.

While the latest library and information sciences technology is a vital part of the Unisa Library, its branch libraries remain a vital resource for the university's diverse student and researcher populations. In all, there are 12 Unisa regional or branch libraries at the following South African centres: Muckleneuk (main campus, Pretoria), Sunnyside (also Pretoria), Cape Town, Durban, East London, Ekurhuleni, Florida, Johannesburg, Polokwane, Rustenburg, Nelspruit and Pietermaritzburg. Beyond South Africa's borders is the Unisa library in Ethiopia.

Our six mobile libraries also helped take vital library services to Unisa students in and around Cape Town, Durban, East London, Johannesburg, Nelspruit, Polokwane and Rustenburg.

The tables below provide information of the total number of items in stock at branches in 2016, the total number of items in stock at mobile libraries in 2016 and, finally, total collections of the various Unisa libraries in 2016.

Table 1: Branches: Total number of items in stock, 2016

Branch	2016 stock
Cape Town	21 576
Durban	30 513
East London	7 720
Ekurhuleni	12 082
Ethiopia	11 945
Florida	226 700
Johannesburg	18 013
Muckleneuk	1 954 589
Nelspruit	7 219
Pietermaritzburg	6 376
Polokwane	18 878
Rustenburg	10 334
Sunnyside	23 728
Total	**2 349 673**

Table 2: Mobile libraries: Total number of items in stock, 2016

Mobile library	2016 stock
Mobile Bus Cape Town	6 525
Mobile Bus Durban	4 007
Mobile Bus East London	3 982
Mobile Bus Johannesburg	3 975
Mobile Bus Nelspruit	3 985
Mobile Bus Polokwane	6 530
Mobile Bus Rustenburg	3 971
Total	**32 975**

Table 3: Total collections of the various Unisa libraries, 2016

Description	2016 stock
Books (Print resources)	2 164 075
E-Book titles (catalogued)	81 731
Other electronic resources (catalogued)	7 352
Microform (Microfiche, microfilm)	44 050
Audiovisual resources (DVD, CD, etc.)	85 440
Subject databases	460
E-Journal titles (subscriptions)	202 560
Total	**2 585 668**

Directorate: Innovation and Technology Transfer

Introduction

The year 2016 was a landmark year for Unisa's intellectual property (IP) portfolio, which started from a zero base in 2011. The five-year investment that the university has made in innovation and technology transfer produced some encouraging initial results, including the first granted patent and the first seed funding awards from the Technology Innovation Agency (TIA). Underpinning these results is an extensive system of innovation education, support for patent applications and disclosures, and events and competitions designed to encourage innovation among staff and students.

Education and awareness

The Directorate Innovation and Technology Transfer (DITT) continues to roll out its InnovationSense workshops as part of its efforts to raise awareness and educate staff and students on IP and how to derive value from it. The workshops, run under the banner "Be IP Smart", attracted more staff and students than in previous years. Twelve such workshops were held in 2016 for 258 staff members and students.

In addition, the DITT organised 22 mini-workshops on innovation and IP for students interested in taking part in the annual Unisa Talent Innovation Programme (TIP), where students whose innovative ideas impress the judges receive grant funding to develop their ideas. A total of 813 students attended the mini-workshops.

Annual Student Research and Innovation Showcase

The Annual Unisa Student Research and Innovation Showcase is a joint initiative of the Research, Innovation, Graduate Studies and Commercialisation portfolios and the Unisa National Student Representative Council (NSRC). The objectives of the showcase include creating awareness among students about the importance of research and innovation as tools for development and progress, and providing a cross-disciplinary platform for students to present and discuss their research.

The fifth Annual Unisa Student Research and Innovation Showcase was held at the Sunnyside Campus from 17-19 August 2016. More than 500 students attended and the number of submissions for the competition events, including FameLab and best poster presentations, increased by 49% compared to 2015. The pre-showcase workshops were also extremely popular, with 3 710 students attending the information sessions and the workshops on topics such as how to write a research paper.

IP disclosures

In 2016, the DITT received 33 IP disclosures, well above the target of 18 disclosures for the year and 120% more than in 2015. There is clearly an upward trend in disclosures received and processed by DITT, and this is expected to continue into 2017 and 2018.

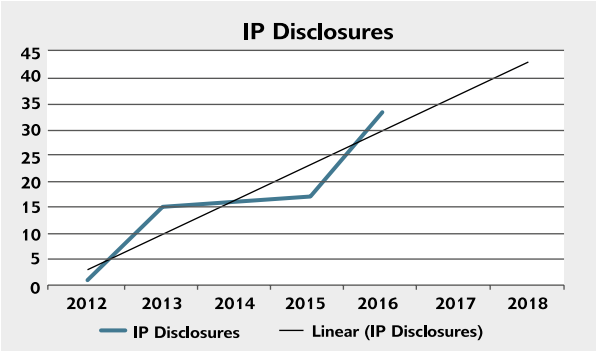


Figure 1: IP disclosures from 2012 to 2016

While there is representation from all the colleges at Unisa, the College of Science, Engineering and Technology (CSET) continues to produce the most disclosures.

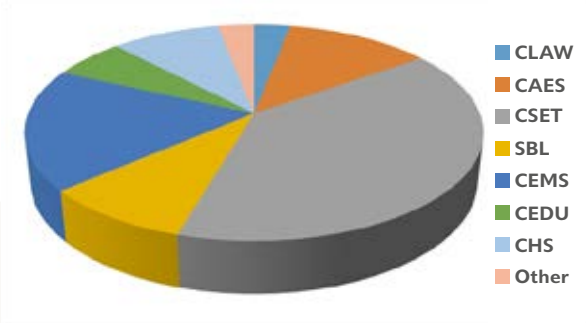


Figure 2: Graph depicting breakdown of college participation

Patent applications

Owing to rigorous internal assessment processes, only technologies that meet or are likely to meet the stringent patentability requirements proceed to the provisional application stage (see figure 3). This assessment is very important given that South Africa is a non-examining country. DITT undertakes novelty searches to establish the potential protectability of ideas, concepts and inventions disclosed. The majority of the assessments are undertaken internally.

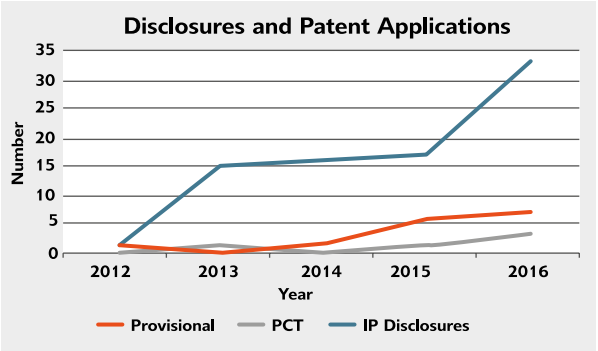


Figure 3: Provisional patent applications and disclosures from 2012 to 2016

In 2016, the DITT filed 10 patent applications, comprising of:

- five provisional patent applications (including one application from 2015 that was refiled in 2016)
- two complete patent applications
- three patent cooperation treaty applications

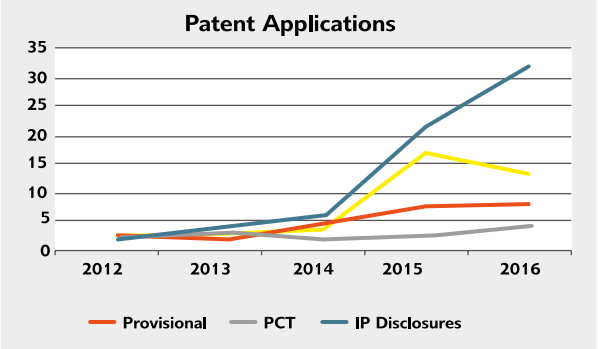


Figure 4: Patent applications filed by the DITT since 2012

The patent portfolio is growing and requires sophisticated management tools. Overall, the portfolio comprises 23 active technologies.

Innovation Support Programme

Encouraging staff to make innovative ideas a reality is the purpose of Unisa's Innovation Support Programme (ISP), where successful candidates receive grants to develop their ideas. In 2016, there were two recipients, Ms Bojane Segooa of the College of Accounting Science and Prof Lukas Snyman of the School of Engineering.

Enabling research

Talent Innovation Programme
The Talent Innovation Programme (TIP) encourages students to turn their innovative ideas into workable solutions with grant funding from Unisa. The 2016 TIP saw three students winning grants: Godisang Lefifi, who completed his final year of Electronic Engineering in 2016, Miriam Farai Siwela, who has since graduated with her PhD student in Educational Leadership and Management, and Sandile Dladla, who completed his BCom Accounting degree in October 2016.

Conclusion
All in all, 2016 was the most successful year yet for Unisa in building up its IP portfolio and commercialising ideas that have the potential to solve pressing societal problems. The door is open for many more IP advancements in the years to come.

Professional Research Group

Unisa is the only university in South Africa to invest in the research interests of its permanent specialist/support professional employees, referred to as the Professional Research Group (PRG). The Professional Research Committee (PRC) is the executive committee that administers all PRG contributions to the research agenda of the university and assists PRG members to further their research careers.

The PRC is the link between the PRG and Unisa's academic research community. All permanent specialist/support professional employees automatically become PRG members, and with their membership have access to several benefits.

These benefits include research funds to complete a master's or doctoral degree, attendance of domestic or foreign conferences to present research papers based on the applicant's studies and assistance in preparing research publications. PRG members also have access to research and development leave as defined by the Unisa Research and Development Policy.

Since 2015, four of the 182 Unisa researchers who have achieved National Research Foundation ratings have been members of the PRG.

In 2016, PRC provided support for 19 master's and doctoral applicants from the PRG. The committee also submitted 19 research and development leave recommendations to the Senate Executive Committee, and approved 14 applications for research grants to attend conferences.

College of Graduate Studies

The College of Graduate Studies (CGS) continued to play a leading role in research, including postgraduate studies, during 2016.

Our researchers

The research team grew to 40 during 2016, consisting of 33 permanent staff members and seven contracted employees. The number of permanent staff members with doctoral degrees remained at 29, a healthy 78.5% of the research staff. Seventeen African researchers contributed to the research output of the college, which showed slight growth, totalling 88 research publications. This translates to 65.17 output points and a per capita count of 1.9.

Research capacity was strengthened by visiting researchers, postgraduate students, academic associates and the special endowed chairs and researchers associated with them. The newest chair within CGS is the South African Democracy Education Trust (SADET) Chair, established during 2016. Professor Sifiso Ndlovu was appointed as incumbent.

Five of the college's researchers successfully applied for National Research Foundation (NRF) ratings in January 2016. They are Professors Keshnee Padayachee, Phalandwa Mulaudzi, Jimi Adesina and Enrico Lombardi, and Dr Lu-Anne Swart. As a result, the college now has 17 NRF-rated researchers, four of whom are B-rated (Professors Jimi Adesina, Mohamed Seedat, Kopano Ratele and Laurette Pretorius).

In another accolade, four of CGS's researchers gained membership of the Academy of Science of South Africa in 2016. They are Professors Jimi Adesina, Sabelo Ndlovu-Gatsheni, Mohamed Seedat and Catherine Odora Hoppers.

CGS hosted 21 postdoctoral fellows in 2016, and they collectively made a significant contribution to research output, postgraduate supervision and conference presentations. More than a third of the fellows were assigned to the United Nations Educational, Scientific and Cultural Organization – University of South Africa (UNESCO-Unisa) Africa Chair in Nanosciences and Nanotechnology and were NRF funded.

Publications

On the publications front, 22 of the 33 permanent academic staff members generated research publications in accredited journals, books and book chapters. Although CGS places greater emphasis on the publication of articles in accredited journals, a number of its researchers presented papers at conferences and had papers included in peer-reviewed proceedings.

All in all, CGS's researchers produced 133 publications, 59 of which appeared in International Bibliography of the Social Science (IBSS) or International Scientific Indexing (ISI) journals. The UNESCO-Unisa Africa Chair in Nanosciences and Nanotechnology generated no fewer than 28 co-authored articles in prestigious titles, mostly Web of Science journals.

The seven visiting researchers hosted by CGS in 2016 also made a substantial contribution by publishing articles, books and book chapters, supervising postgraduate students, serving as examiners to postgraduate students and organising seminars and workshops.

Making the most of funding

Researchers are encouraged to explore all appropriate internal and external funding opportunities. There are three broad categories of funding: college research funding, external funding and Unisa research support grants.
Here is a summary of funding that CGS researchers received in 2016:

- Altogether 27 researchers received college research grants, mostly for membership of scientific and research associations and to attend conferences. Individual grants ranged from R3 480 to R79 000, and the total paid came to just over R600 000.
- The College's 17 NRF-rated researchers received NRF incentive funding of R560 000.
- External grant funding increased significantly, amounting to R11,08 million. The largest awards were received for the two South African Research Chairs Initiative (SARChI) chairs, Development Education (R3,5 million) and Social Policy (R2,7 million).

- Six researchers benefited from Unisa research support programmes, either to help fund their research projects or to improve their academic qualifications.

CGS is responsible for the central reporting on the participation by several colleges in the Grow Your Own Timbre strategic programme funded by the Department of Higher Education and Training. Five candidates were appointed in CGS, and were mentored by senior researchers. Two of them submitted their master's theses for examination during 2016 and are continuing with PhD studies.

Celebrating achievements

CGS celebrated several research achievements during 2016, including Professor Patrick Ngulube's appointment as chairperson of the National Advisory Council on Archives and Professor Nellie Feza receiving the Venus International Research Awards (VIRA) Distinguished Scientist Award in Mathematics Education. Professor Lerothodi Leeuw won the NRF Hamilton Naki Award. Six researchers obtained their PhDs.

The year 2016 marked ten years since Unisa inaugurated its centre in Ethiopia. The university has graduated 531 students, comprising 115 doctoral and 309 master's graduates. The majority of the doctoral graduates in Ethiopia are university lecturers, but Unisa has also played a role in building the capacity of justice organs, public health professionals and managers of public and private enterprises. Doctoral graduate Workineh Gebeyehu Woldekidan was appointed as Ethiopian Minister of Foreign Affairs.

Endowed chairs

CGS is rightly proud of its four endowed and special chairs.

The overarching focus of the **Department of Science and Technology/National Research Foundation (DST/NRF) South African Research Chairs Initiative (SARChI) Chair in Social Policy** under Professor Jimi Adesina is Rethinking social policy: In search of inclusive development. In addition to research projects across the continent, interaction with public servants across Africa and various conferences, the chair can claim 13 published journal articles and book chapters, seven of them sole-authored or co-authored by the chair's incumbent.

The chair's influence is growing with appointments to the board of the United Nations (UN) Research Institute for Social Development (Geneva) and to the International Advisory Committee of the Dutch NWO (equivalent of the NRF) on its social protection research grant making body. There was also an invitation to direct and lead the research/policy nexus workshop for African policymakers by the UN Institute for Economic Development and Planning and the African Union Commission.

The **SARChI Chair in Development Education** under Professor Catherine Odora Hoppers had a busy year, with seven published publications and seven publications and one book accepted. *Beyond Foucault: The Rise of Indigenous Subjugated Knowledges,* co-authored by her, was accepted for publication by Stellenbosch University Press. The other publications were all in international journals dealing with various aspects essential to South Africa's higher education sector.

The United Nations Educational, Scientific and Cultural Organization – University of South Africa (UNESCO-Unisa) Africa Chair in Nanosciences and Nanotechnology under Professor Malik Maaza underwent a mid-term review in June 2016. The review panel indicated that his was the most successful UNESCO chair supported in South Africa to date In addition to numerous publications, highlights included the co-hosting of three international events, international partnerships with parties in India, Switzerland and France, and the securing of significant external funding.
Professor Sifiso Ndlovu was appointed as chair of the South African Democracy Education Trust (SADET) and is responsible for the *Road to Democracy* series published by Unisa Press. He offered colloquia and seminars at Unisa during 2016, presented international papers on invitation and was the co-editor with Miranda Strydom of the bestseller *The Thabo Mbeki I Know* (2016) (Picador Africa).

Research institutes

The five research institutes making up the School of Transdisciplinary Research Institutes made significant contributions in 2016.

In 2016 the **Institute for Social and Health Sciences (ISHS)** marked its 30th anniversary, 15 years of which were carried out through the Violence, Injury and Peace Research Unit (VIPRU) as a formalised partnership with the South African Medical Research Council. Focusing on community engaged research, the Institute and VIPRU also hosted the 6th International Conference on Community Psychology and the First National Conference on Violence which created new partnerships and opportunities.

Since 2012 the **Archie Mafeje Research Institute (AMRI**) has been a pan-African research centre. It has re-organised its research into six core niche areas on identity, governance, African social formations, land reform, inequality and conflict.

In addition to its conferences, seminars and numerous publications, AMRI participates in three community engagement projects: Understanding African Families and the Implications for Social Policy in South Africa; Land Reform, Land Grabbing and Agricultural Development; and Defining the South African Identity Lexis.

One of the critical projects of the **Institute for African Renaissance Studies (IARS)** is the Management of Democratic Elections in Africa (MDEA) programme funded by the United States Agency for International Development, which has resulted in the training of electoral officials from 28 African states over the past five years.

IARS hosts the *International Journal of African Renaissance Studies*. Its researchers were active in publishing and attended and presented various workshops.

The objective of the **Institute of Open Distance Learning (IODL**) is to conduct research in fields related to open, distance and electronic learning (ODeL), promote collaborative research initiatives and facilitate capacity development programmes.

One of its 2016 highlights was the launch of the local chapter of the Global Doctoral Consortium (GDC). This initiative started at Unisa and was introduced worldwide to support doctoral students in the field related to online, open, flexible and technology enhanced learning research.
Over 10 years the **Institute for Science and Technology Education (ISTE)** has developed a research theme and subthemes aimed at addressing the different facets of the challenges of teaching and learning of mathematics, science and technology in SA. Each of these has been developed into research projects. ISTE's Winter School training educators and its annual conference on Maths, Science and Technology Education have hallmarks of the Institute and built on previous successes during 2016.

Research training

The **School of Interdisciplinary Research and Graduate Studies (SIRGS)** coordinates research training workshops for Unisa students enrolled for master's and doctoral studies.
Over 100 workshops were organised at the Muckleneuk and the Science campuses in 2016, while others were held at regional centres and colleges. Weekend workshops accommodated working students.

The 2016 Unisa Doctoral and Postdoctoral Summer School organised by SIRGS was held at the Science Campus in November 2016. The five streams presented were: **Water Stress and Remediation Technologies; Sustainable Energy; Freedom in Diversity. Diversity of Freedom; Men, Masculinities and Gendered Liberation;** and **Quasars at Multi-wavelengths and Environments.** The faculty consisted of 16 national and international experts, and there were close to 100 participants from across the continent.

Training in research originality technology

Critically, SIRGS assists researchers across the university with training in the use of software packages aimed at verifying originality of research. During 2016 training was provided for Turnitin and Ithenticate.

Research Integrity Office

The Research Integrity Office, situated in the Directorate: Research Support, has been established to promote high standards of research integrity throughout the university. In support of Unisa's vision and strategic objectives, and the strategic intent of Research Support, it exists to create an enabling environment for research integrity to flourish and to inspire responsible research practices.

The year 2016 saw the Research Integrity Office producing some notable achievements in the spheres of research ethics policy, training and awareness, as well as in refining the university's ethics review committees and helping to strengthen the community of research ethics committees in Southern Africa.

Policy on Research Ethics revised

The university Council approved the Revised Policy on Research Ethics in September 2016, resulting in changes in four main areas:

- More stringent requirements for health or health-related research
- Stricter information privacy requirements
- A stronger focus on ethics clearance for student research projects
- Greater emphasis on ethics in the treatment of animals in research.

Council also endorsed the streamlined research permission procedure when it approved the Revised Policy on Conducting Research Involving Unisa Employees, Students or with Data in November 2016, thus promoting Unisa's compliance with the Protection of Personal Information Act.

Actively involved with REASA

Unisa was actively involved in the Research Ethics Committee Association of Southern Africa (REASA) throughout 2016. Dr Retha Visagie, Manager of Unisa's Research Integrity Office, is the chair and a founder member of the steering committee of REASA. The association aims to create and support sustainable networks between research ethics committees in Africa.

Research ethics committee matters

Two college ethics review committees at Unisa received provisional registration from the National Health Research Ethics Council (NHREC). This was in response to more stringent requirements for health and health-related research. The two committees are those of the College of Human Sciences and the College of Agriculture and Environmental Sciences.

The strategic engagement drive of the Unisa Research Ethics Review Committee culminated in the Senate Research, Innovation, Postgraduate Degrees and Commercialisation Committee approving the 2016–2020 functional research ethics strategic plan. The plan provides strategic direction to ethics review committees across the university.

Training and raising awareness

A total of 710 internal and external participants (mainly academics and members of ethics review committees) were reached through research ethics awareness raising and training workshops offered by the Research Integrity Office during 2016. This included training 325 Unisa employees in research ethics, 62.5% more than the institutional research ethics training target of 2016. (The target was to train 200 permanent employees in research ethics.) The third Research Ethics Education Course, inspired by the United Nations Educational, Scientific and Cultural Organization's (UNESCO's) ethics education framework and co-developed with ethics educators from three neighbouring universities, was offered during a two-day workshop in October 2016.

Preparing for an open access era

The Research Integrity Office collaborated with stakeholders from the library, colleges and ICT to assess Unisa's readiness to manage research data in an open access era, resulting in the development of a draft Research Data Management Plan.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